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**United Nations Development Programme
Country: Paraguay
PROJECT DOCUMENT**

Project title: Asuncion Green City of the Americas – Pathways to Sustainability	
Country: Paraguay	Implementing Partner: UNDP
Management Arrangements: DIM	
UNDAF/Country Programme Outcome: Outcome 1.1: Paraguay will have progressed in protecting and guaranteeing the rights of all individuals, with emphasis on vulnerable and discriminated populations Outcome 2.1: Devolution and accountability: Paraguay will have reduced poverty levels, established decent work and guaranteed improvement of working population's income Outcome 3.1: Paraguay will have reduced its disaster risks and increased community resilience and responsiveness to emergencies and disasters Outcome 3.2: Paraguay will have achieved significant progress in reducing deforestation and desertification, in best practices of biodiversity conservation and sustainable use, and in climate change mitigation and adaptation.	
UNDP Strategic Plan Output: Output 1.3. Solutions developed at national and sub-national levels for sustainable management of natural resources, ecosystem services, chemicals and waste	
UNDP Social and Environmental Screening Category: Moderate	UNDP Gender Marker: GEN 2
Atlas Project ID/Award ID number: 00096984	Atlas Output ID/Project ID number: 00100857
UNDP-GEF PIMS ID number: 5188	GEF ID number: 9127
Planned start date: 1/09/2016	Planned end date: 31/08/2021
LPAC date:	
Brief project description: The objective of the proposed project is to improve the quality of life in the Asuncion Metropolitan Area (AMA) and deliver multiple benefits through the integration of transport and solid waste management and green infrastructure into a framework for a sustainable and resilient city. It has been organized into five outcomes: <ol style="list-style-type: none"> 1) Enabling framework for a green sustainable city enhances integrated urban planning of the AMA; 2) Sustainable mobility and transport in the AMA for reducing GHG emissions from urban transport; 3) Improved chemicals and waste management system for reducing emissions of UPOPs, GHGs and toxic chemicals; 4) Emplacing and improving Protected Area management; 5) Dissemination of Lessons-learned, monitoring & evaluation To achieve the stated objective, the project will place Asuncion and its metropolitan area on a pathway towards a sustainable and resilient city through addressing the principal current urban problems; notably transport, solid waste disposal, and management of green areas. The project will implement a framework that attends to these issues in a systematic and integrated manner, thus providing a critical step forward to improve the city's	

sustainability.

This will be done through integrating sectorial planning and defining short, medium and long term goals; developing capacities for their implementation and long term funding needs, and setting up monitoring systems needed to guide and adapt plans over time; thereby promoting a more coherent and integrated vision for the future of Asunción, in which common goals govern policy, planning and investment decisions. Furthermore, it will undertake on the ground action to address the identified problems and delivering solutions to global environment problems. This includes improving the transport and management of municipal and hazardous waste management to reduce GHG and chemicals releases; and improve the management of green areas to conserve global biodiversity values and provide ecosystem services that contribute to GHG reduction and health related benefits; exploring cross-sectorial benefits and providing important inputs and guidance to the broader framework for a sustainable and resilient city.

Expected global environmental benefits to be accrued include: a) 1,227,442 tCO₂e emissions mitigated and sequestered through transport oriented development, green infrastructure and solid waste management policy uptake; b) 13.2 gTEQ UPOP emissions reduced through an integrated waste and chemical management system; and c) increase in 1% of global populations (number of individuals) of 5 species found seasonally at site:- Buff-breasted Sandpiper (*Tryngites subruficollis*); American Golden Plover (*Pluvialis dominica*); Lesser Yellowlegs (*Tringa flavipes*); White-rumped Sandpiper (*Calidris fuscicollis*); and Pectoral Sandpiper (*Calidris melanotos*).

FINANCING PLAN		
GEF Trust Fund		USD 7,493,120
UNDP TRAC resources		USD 0
Cash co-financing to be administered by UNDP		USD 0
(1) Total Budget administered by UNDP		USD 7,493,120
PARALLEL CO-FINANCING		
	UNDP	USD 300,000
	Government	USD 239,403,800
	NGO	USD 636,200
(2) Total co-financing		USD 240,340,000
(3) Grand-Total Project Financing (1)+(2)		USD 247,833,120
SIGNATURES		
Signature: print name below	Agreed by Government	Date/Month/Year:
Signature: print name below	Agreed by Implementing Partner	Date/Month/Year:
Signature: print name below	Agreed by UNDP	Date/Month/Year:

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List of Acronyms and Abbreviations

AMA	Asuncion Metropolitan Area
BAT	Best Available Technologies
BEP	Best Environmental Practices
BOD	Biochemical Oxygen Demand
BRT	Bus Rapid Transit
COD	Chemical Oxygen Demand
CSO	Civil Society Organization
DMH	Meteorological and Hydrological Directorate
DRR	Disaster Risk Reduction
ERC	Evaluation Resource Center
Gg	Gigagrams
gTEQ	Grams of Toxic Equivalent
CH4	Methane
FEDEM	Federation of Neighbor Associations of Paraguay
GHG	Greenhouse gas emissions
GoP	Government of Paraguay
GPSC	Global Platform for Sustainable Cities
IAP	Sustainable Cities Integrated Approach Pilot Program
IAPA	Asuncion Autonomous Planning Institute
JBA	Asuncion Botanical Garden and Zoo
Ktep	Kilotons of oil equivalent
LUP	Land Use Plan
M&E	Monitoring and Evaluation
MIA	Minamata Convention Initial Assessments
MRV	Monitoring, Reporting and Verification
MSW	Municipal solid waste
MTR	Mid-Term Review
MOPC	Ministry of Public Works

N ₂ O	Nitrous Oxide
NAMA	Nationally Appropriated Mitigation Action
NGO	Non-Governmental Organization
NIM	National Implementation Modality
NIP	Stockholm National Implementation Plan
OCHA	Office for the Coordination of Humanitarian Affairs
PBDE	Polybrominated diphenyl ethers
PES	Payment for Ecosystem Services
PEMS	Portable Emissions Measurement System
PIR	Project Implementation Report
POPP	Programme and Operations Policies and Procedures
POPs	Persistent Organic Pollutants
PPR	Project Progress Reports
PQM	Parque Guasu Metropolitano
PY	Project year
RBSMBA	Banco San Miguel and Bahia de Asuncion Ecological Reserve
ROAR	Results-Oriented Annual Report
SBAA	Standard Basic Assistance Agreement
SDG	Sustainable Development Goals
SDP	Sustainable Development Plan
SEAM	Environment Secretariat
SEN	National Emergency Secretariat
SIAM	Environmental Information System
SINASIP	National Protected Areas System
SNC	National Culture Secretariat
SNT	National Tourism Secretariat
STP	Technical Planning Secretariat
TE	Terminal Evaluation
tCO _{2e}	Tons of Carbon Dioxide Equivalent
TOD	Transit-oriented Development
UCCI	Union of Ibero-american Capital Cities
UNDAC	United Nations Disaster Assessment and Coordination
UNFCCC	United Nations Convention Framework on Climate Change
UNDP	United Nations Development Programme
UPOPs	Unintentional Persistent Organic Pollutants
USD	United States Dollars

II. DEVELOPMENT CHALLENGE

General Background

1. The world is urbanizing at a rapid pace and by 2050 the majority of the urban population growth will be concentrated in developing countries. Cities worldwide consume over two-thirds of global energy supply, are responsible for 70% of greenhouse gas emissions, and are also uniquely vulnerable to climate change. City governments face a broad set of challenges revolving around providing jobs, services and housing to growing urban populations. However, if managed well, compact, resilient, inclusive and resource-efficient cities could become drivers of sustainable development, contributing to both local livability and global public goods.
2. In this context, the GEF's *Sustainable Cities* Integrated Approach Pilot (IAP) program, seeks to demonstrate innovative models of sustainable urban management through integrated urban policy and strategy support and piloting of high impact options, and to foster the replication of sustainable urban management models. The IAP will support a common Sustainable Cities Global Platform (GPSC) that will provide a range of support services to cities participating in the program (tools and metrics, sustainability planning support, knowledge management, targeted capacity building, financing sustainability, and global engagement facility), all of which aim to help deliver the IAP program goal of improving the depth, breadth, and quality of local sustainability planning efforts and investment decisions. These services will help cities benchmark their performance, track implementation progress and aid with knowledge curation and sharing, institutional capacity building, and program implementation.
3. Asuncion and its metropolitan area have been selected as a pilot city within the IAP program. It is highly representative of urban growth trends in Latin America and the Caribbean region, experiencing accelerated growth patterns and facing sustainability problems, and as a pilot city, offers a unique opportunity to link green infrastructure, transport, waste management and biodiversity conservation, generating multiple quantifiable global environmental benefits, while providing valuable experience and lessons that can be replicated across the region.

Context – Asuncion and Metropolitan Area

4. Urban population in Paraguay, which represented 37% of the total population in 1974, has increased to a current 59%. Asuncion and its Metropolitan Area (AMA)¹ sit on the left bank of the Paraguay River and the presence of the river's meander has determined the growth of the city towards the East. The riverside has been traditionally occupied by port, logistical and industrial activities. Urbanization followed a lineal pattern along the main streets with economic development concentrated along these dynamic axes towards the East and with different models and activities in the different axes (e.g. services, logistics, businesses). Rural-urban migrations started gradually during the 1960s and increased significantly since the 1980s due to increasing rural poverty, being Asuncion and surrounding municipalities the main pole of attraction as a main center for services (health, education) and employment opportunities, contributing to the population growth. In 40 years the population of AMA increased almost fivefold to a present day 2.3 million people, representing 33% of the 6.9 million people that live in Paraguay.

¹ The AMA comprises 11 municipalities: 1) Asuncion 2) Capiata 3) Fernando de la Mora 4) Lambare 5) Limpio 6) Luque 7) Mariano Roque Alonso 8) Nemby 9) San Antonio 10) San Lorenzo 11) Villa Elisa

5. The city expanded following a radio-centric pattern with very low global population density. New urbanizations (land partitions and plots) increased dispersed between the axes or following a perpendicular pattern to these. The interstitial spaces farther apart from the main communication axes, as well as the rivers' flood plain and other flood-prone areas were settled but have been at the margin of urban development lacking basic services, equipment and access to the city. Social housing developments are sparsely connected to the city.

6. The central municipality, the City of Asuncion doubled its population in 40 years (from 250,000 in 1962 to around 512,000 in 2002) but has remained stable in the past 10 years, with a population growth rate of only 0.6% between 2002 and 2012. The growth has instead moved to the neighboring municipalities, especially due to the increase in land and property prices and taxes, especially in Asuncion, pushing the middle and low-income families further away to the East to the surrounding municipalities; leading to a larger urban footprint increasing from 652 km² in 2002 to 809 km² in 2012 (corresponding population density of 2,400 inhabitants/km² and 2,800 inhabitants/km²). This has also led to an increase in construction of high-rise buildings in residential areas. Thus although the population has grown by 43% in the last 10 years the urban density has only increased by 16%, confirming that the current urban growth of the AMA is based on a horizontal expansion model. Currently, population growth is concentrated in the second and third periphery of the AMA, following a spontaneous peri-urbanization phenomenon that drives big structural and physical changes in rural areas, with confronting land uses in these changing areas.

7. Despite this expansion, the main economic activity and provision of services are still centered in the City of Asunción. The neighboring cities serve as commuter towns that depend on Asuncion for economic activities, creating a significant daily influx into the City and an increasing demand for services. Population projections estimate that by 2050 the population of the AMA will be 3.8 million people, or 37% over a projected total population of 10 million. Asuncion and the 10 municipalities of the AMA play a key role in the sustainable development of Paraguay; although covering less than 0.2% of the country's surface area, they generate almost 47.9% of the Gross National Product.

8. As Asunción has evolved from a small city to a metropolitan region it has experienced several problems. The growth of the AMA has been unstructured rather than planned, creating a series of urban problems that affect the city's environment, economy, and quality of life. Furthermore, investment in key infrastructure and services, such as water distribution and treatment, roads, and waste management facilities has lagged. As a result, the AMA suffers from several structural inefficiencies as well as large discrepancies in the services received by the population, depending on location and income. In the short term three main priority issues need to be addressed to move along the city towards a more sustainable city path; transport; solid waste and conservation of critical ecosystem services.

9. *Transport:* One of the main problems in the AMA is its urban transport network. The rapid, unplanned urban expansion has resulted in an unsustainable transportation system that has contributed to the city's increased congestion problem rather than providing a solution. The AMA in general lacks infrastructure for multi modal transportation, be it for the use of public transportation, non-motorized vehicles like bicycles or private means. A study undertaken by Gehl Architects² in 2014 showed that pedestrians represent 67% of the users of the busiest area of Asuncion; however the space dedicated to them is less than 31%. The low level of space for pedestrian traffic is hindered by the deteriorated condition of sidewalks or commercial infrastructure placed on the sidewalks. Combined with inclement weather, lack of illumination and insecurity, walking in Asuncion was defined by the study as a third

² Architects, G., *Caminemos: Vida Publica y Espacio Public en el Area Metropolitana de Asuncion*. 2014, Banco Interamericano de Desarrollo: Copenhagen, Dinamarca

class experience. The same can be said of the bicycles as transportation means since there are no demarcated bicycle paths, except for a few recreational bicycle lanes and a short 1 Km stretch of street downtown.

10. Currently the use of public transportation is relatively high and represents 52% of the motorized trips in the AMA. Nevertheless this represents a declining trend in the use of public transportation, which in 1998 represented 64% of the motorized trips. This is understandable due to the poor quality of public transportation; as an example, more than 90% of the buses that serve the metropolitan area are at least 10 years old and 50% are more than 15 years old. In this context, and with rising incomes and increased access to credit, many people opt for private vehicle ownership to public transportation. In fact the motorization rate in 2010 was of 67 vehicles per 1000 inhabitants and by 2030 it is expected to rise to 131 vehicles per 1000 inhabitants. This is exemplified by the fluidity of traffic in the main trunk lines of the AMA, which in certain hours of the day is of around 11 km/hr dropping from around 18 km/hr 10 years ago (for reference the average human walking speed is 5 km/hr). The infrastructure to manage this increased volume is not in place, leading to traffic congestion, increased travel times, and greenhouse gas emissions.

11. The unsustainability of the transport sector is tightly bound to the low energy efficiency and high GHG emissions. Transport is currently the highest energy-consuming sector in Paraguay with 37% of all the energy consumed and comprising Diesel, Gasoline, Liquefied Petroleum Gas and Alcohol. Although Paraguay owns one of the largest hydroelectric dams in the world, only 20% of its total energy consumption comes from this source, clearly showing the low level of use of clean and renewable energy in the transport sector. In 2014 Diesel and Gasoline represented the highest share in fuel consumption, 66% and 25% respectively, the rest being LPG and Alcohol. The use of Gasoline has notoriously increased from 9,000 kilotons of oil equivalent (ktep) in 2008 to 18,000 ktep in 2014, probably due to the introduction of motorcycles assembled in the country, with a notorious increase of 600% in numbers in the last 13 years. The increase in the use of motorcycles has triggered an inadvertent effect, which is the greater use of private vehicles and lower dependence on public transportation, and at the same time an increase in health costs to the State due to the higher number of accidents.

12. The emissions from the transport sector have increased from 4 MtCO₂-e in 2008 to 5.36 MtCO₂-e in 2014. The transport sector is responsible for greater GHG emissions despite the fact that the emissions in general have not increased significantly, representing 29% of all GHG emissions in 2014. At national level burning of firewood still remains the largest source of emissions in the energy sector, with 7.84 MtCO₂-eq, followed by Diesel with 3.74 MtCO₂-eq. The emissions inventory in the AMA undertaken within the framework of the Emerging and Sustainable Cities Initiative (ESCI)³ in 2012 determined that around 7 MtCO₂e were emitted within the AMA, number that is reduced to 3.8 MtCO₂e if biogenic emissions (firewood, biodiesel, plant residues and alcohol) are not accounted for. This is equivalent to 2.3 tCO₂e/capita in the AMA. Removing the biogenic emissions, the main source of emissions is transport, representing 54% of the total emissions; meaning that at national level the AMA is responsible for around 40% of the total emissions of the sector.

13. *Municipal solid wastes and chemicals*: The amount of municipal solid waste (MSW) produced by the population of the AMA reaches about 1440 tons per day. However, not all this amount reaches the authorized disposal sites, as waste collection services cover 68% of the population. Around 850 to 1000 tons/day are collected by services formally hired by the municipalities and dumped at two semi-regulated

³ The Inter-American Development Bank (IDB) provides support within the framework of the ESCI, to national and sub-national governments in development and execution of city Action Plans. The ESCI identifies, organizes and prioritizes urban interventions toward sustainable growth of emerging cities based on three pillars: environmental and climate change sustainability; urban sustainability; and fiscal sustainability and governance.

waste dumps, Cateura in the municipality of Asunción and El Farol in the municipality of Villa Hayes, the latter outside the AMA. The rest is disposed of at 20 illegal dumpsites. It is assumed that in particular waste from households, not serviced by waste collection vehicles (~30–40%), ends up on illegal dumpsites, next to roadsides, in backyards and in local water bodies. According to these data, the average rate of generation of MSW in Paraguay is about 1.2 kg/person/day, ranging between 0.5 and 1.8 kg/person/day depending on the municipality and income range of the population. The low coverage of collection services contributes to aggravate runoffs and flooding during intense rains since garbage obstructs the storm drains.

14. A number of environmental and socio-economic problems are associated with MSW. On the environmental side, one of these problems is GHG emissions generated by the decomposition of waste in the Cateura and El Farol landfills, which generate mainly methane gas (CH₄) with an annual emission of 11.53 Gg (Gigagrams) and to a lesser extent Nitrous Oxide (N₂O) with annual emissions of 1.55 Gg, coming mainly from human excreta. Indiscriminate dumping of waste at illegal dumpsites and non-sanitary landfills is resulting in the pollution of soil and water resources from leachate and in air pollution from the open burning of waste, which releases unintentionally produced Persistent Organic Pollutants (UPOPs). It is estimated that leachate contamination from illegal dumps covers approximately 10.3 hectares affecting soils and surface and groundwater. Samples analyzed from the three Cateura ponds in 2010 have resulted in significant differences between Chemical Oxygen Demand (COD) and Biochemical Oxygen Demand (BOD), which mean high contamination levels and a risk to exposed ecosystems⁴.

15. On the social side, some 5,000 people live in the vicinity of Cateura. Air, water and soil pollution poses serious health risks to the community as housing zoning laws are not being strictly enforced. Proximity to the waste dump also increases communities' exposure to toxic and hazardous chemicals that might (illegally) have been dumped, as well as an increased risk to vectors carrying diseases (e.g. dengue's *Aedes aegypti*), which prefer to breed in water retained by waste items, such as tires. Currently no large-scale waste recycling or recovery initiatives exist, although a few small scale SMEs exist. Therefore, it is mostly the informal sector that makes a living from waste picking. An estimated 3,500 people in Asuncion make a living out of waste separation. Additionally, some 550 people work in Cateura as waste pickers, called *gancheros*. The work of the *gancheros* has a very high social cost due to the degrading conditions in which they live and work; they must endure the rejection of society and do not have other livelihood options. Life expectancy is 45 years. Teenagers working in the landfill have drug and aggression problems and most adults consume alcohol.

16. An additional concern is the management of particular (hazardous) waste streams. Most industrial or hazardous waste is treated and sent to El Farol landfill. In some cases though, industries have internal recycling programs for the re-use of materials, or sell industrial waste for co-processing or incineration (e.g. as fuel). However, the specialized hazardous landfill and the management of hazardous waste in general is not closely monitored, audited or controlled and as a result such wastes still find their way to municipal waste dumps. In addition, there are a number of particular waste streams, such as tires and e-waste, for which currently no waste management approaches are in place. In the case of waste tires, most of these are burned in the open to retrieve the metal structure of the tire for further recycling, resulting in the generation of UPOPs. It is assumed that similar practices are applied to extract valuable elements from electronic waste. Such processes can also result in releases of UPOPs, Polybrominated diphenyl ethers (PBDE) and toxic metals such as Mercury and Lead.

⁴ Cateura has a main leachate pool and two ponds. The leachate pool works through natural evaporation; however the rate of leachate generation is higher than the rate of evaporation, therefore there is a leachate overload. Sampling resulted in COD values were 4605 mg/l in the leachate pool, 578 mg/l in pond #1 and 303 mg/l in pond #2, while BOD values were 155 mg/l in the leachate pool, 62.8 mg/l in pond #1 and 1.2 mg/l in pond #2

17. *Biodiversity*: Asuncion has an extraordinary endowment of natural resources in part because of its location on the shores of the Paraguay river and its position at the confluence of four distinct ecoregions (Atlantic Forest, Cerrado, Chaco and Southern Grasslands), along with its unusually high number of green areas for a city of this size and stage in growth. These green areas include 1,956 parks, plaza and bays that collectively represent 28% (3,565 hectares) of the Asuncion land area. A further 23% (4,865 ha) of the municipal territory comprises green areas in built up areas (residential gardens, empty lots) and 10% rivers, streams and lakes. In terms of green areas per capita, Asuncion has 45.38 m² of green areas per capita, of which 26.03 m² is public (parks, plazas) and 19.35 m² correspond to private properties. These green areas host a unique biodiversity of global significance, which is exceptional for an urban setting. Asuncion has been cited amongst the highest biodiversity urban areas with 353 native bird species, or 49% of the entire bird species of the country. The Asuncion Bay and the Botanical Garden host the highest concentrations of bird species with 290 and 160 species respectively, the former number corresponding mainly to migratory species. The Asuncion Bay is an Important Bird Area (IBA) of relevance for aquatic species⁵ and is part of the *Banco San Miguel and Bahía de Asuncion* Ecological Reserve (RBSMBA), which is a protected area under the National Protected Area System (SINASIP) and hosts five species of globally significant congregations with 1% of global population seasonally at site, namely Buff-breasted Sandpiper (*Tryngites subruficollis*); American Golden Plover (*Pluvialis dominica*), Lesser Yellowleg (*Tringa flavipes*), White-rumped Sandpiper (*Calidris fuscicollis*) and Pectoral Sandpiper (*Calidris melanotos*) (Annex I provides additional details on Asuncion protected areas and biodiversity). Due to this unique cohabitation of an urban setting and a large number of green areas that host an unusually high level of biodiversity, Asuncion was named in 2014 the “Green Capital” of the Union of Ibero-american Capital Cities (UCCI). However, these benefits are not always recognized and valued, and can therefore diminish as a result of a disorderly and rapid urban expansion.

18. Although the extension of green areas remains relatively constant, the global value of this biodiversity endowment is being eroded through habitat conversion and degradation leading to fragmentation, reducing the viability of populations. This is largely due to expansion of the transport system to accommodate daily flux of people from surrounding cities and the increased production of solid and liquid waste. A dramatic example of threats to these global benefits is the drop in migratory species noted following the construction of phase one of the *Costanera* (a waterfront parkway) that cuts through a section of the bay. Construction material extracted from sand banks within the area and dredging damaged foraging and roosting habitat critical for migratory birds. Migrant populations monitored since 2000 show a marked decrease in species diversity and abundance, dropping almost half from the preconstruction total of about 10,000 individuals that passed through the bay in 2013. Of the flagship species, in 2015 only small flocks of birds were observed, 7 Buff-breasted Sandpipers (*Tryngites subruficollis*); 5 American Golden Plovers (*Pluvialis dominica*), 2 Lesser Yellowlegs (*Tringa flavipes*), 37 White-rumped Sandpipers (*Calidris fuscicollis*) and 70 Pectoral Sandpipers (*Calidris melanotos*). Likewise, the Cateura dumpsite is of particular concern, since it is located next to a wetland that borders the Paraguay River, with potential risk of exposure to leachates. Negative impacts are also caused by numerous illegal dumpsites, including within the borders of the RBSMBA. Furthermore, the RBSMBA as part of the SINASIP faces similar challenges to as other protected areas in the system, including weak management capacities at institutional, lack of updated management plans, weak operational capacities due to insufficient funding, infrastructure and human resources, weak monitoring.

19. Asuncion is vulnerable to extreme events due to its location on the shores of the Paraguay River and related cyclical floods, which poses additional challenges for transport and waste management. The timing and degree of floods varies in part caused by El Niño events but increasingly due to the changing

⁵ In the 2008 inventory carried out by Guyra Paraguay/Birdlife International, it qualified under criterion A4i (>1% of global population for one species) and under criterion A4iii (>20,000 water birds). See Annex I for additional information.

global climate. As long as city planning does not consider flooding risks adequately, the repercussions will worsen with time. Over 30,000 families live in the so-called *bañados* (lowlands), which are part of the river's flood plain, and are affected by each flooding. Runoffs due to deficient drains and inadequate disposition of solid wastes around the city aggravate the problem in the *bañados*.

20. These problems originate in the lack of adequate and integrated urban planning to face the accelerated expansion and the resulting unplanned, disperse and fragmented growth model. Despite these problems, however, the AMA is in a development phase where several negative trends can be contained and even reverted. There are four main barriers that need to be addressed to implement a framework that will attend to the principal current urban problems, notably transport, solid waste disposal and management of green areas, to place the AMA on a pathway towards a sustainable and resilient city (see also Figure 1: Theory of Change below). Firstly, the AMA lacks a framework for sustainable medium and long term development due to: i) Weak institutional capacities for integrated planning, implementation and monitoring of urban resilient, adaptive and sustainable growth at all levels (public, private and civil society); ii) Lack of adequate medium and long term planning instruments that integrate the relevant urban development sectors, namely land use plans and sustainable development plans covering multiple sectors and budgets and use of geospatial information. Although the Municipality of Asuncion prepared an urban regulatory plan in 1992 it has not been fully respected and has not been updated in accordance with the changes experienced by the city since its approval. In 1994 an urban and environmental plan was elaborated but was approved only in 2000; it has been partially implemented and follow-up and monitoring has been insufficient to extract lessons. The municipality is currently working to transform this plan into a sustainable development plan. The other AMA municipalities have for the first time submitted urban development plans in 2016 to comply with the National Expenditures Budget Law for the 2016 fiscal year, which stipulates that municipalities must present their development plans as mandated by the Municipal Law in order to receive their budgetary allocations of royalties from the Itaipu and Yacyreta Bi-national Entities (hydroelectric dams); and iii) Lack of inter-institutional and inter-sectoral coordination mechanisms and partnerships involving public, private and civil society stakeholders to provide solutions for the sustainable management and development of the AMA.

21. Secondly, the unsustainability of the transport system due to: i) Low quality of public transport, and lack of safety for women using it, ii) Lack of options for multi-modal transportation, iii) Lack of driver education, iv) Low level of enforcement of traffic regulations, and v) Weak institutional capacities for transit oriented development (TOD). Current plans for improving the transport system do not provide a comprehensive response to the city's overall traffic management problems, and hence it is unlikely that the levels of congestion will diminish. Thirdly, there is a lack of integrated approach to the management of municipal solid waste in the AMA. This is due to several shortcomings: i) Each city within the limits of AMA currently has a different approach to handling, sorting and managing municipal waste and there is no coordination among them; ii) Financial resources of municipalities are currently not sufficient to cover the costs necessary to implement the MSW Master Plan and extend quality services to all its residents and close semi-controlled dumpsites; iii) Lack of specific regulations for various waste streams, prescribing its collection, recycling, treatment and disposal in combination with insufficient monitoring and enforcement of the waste management regulations; iv) Insufficient technical capacity for the treatment of particular waste streams of concerns (e.g. chemicals, e-waste, tires, etc.); v) Lack of public awareness on waste related issues, such as proper separation and disposal, as well as overall awareness on the implications to human health and the environment caused by improper waste management; vi) Lack of alternative livelihood options for informal waste pickers.

22. Lastly, there are weak capacities for an effective management of parks, plazas and protected areas. This is due to: i) Lack of coordination between the national and municipal institutions mandated with protected areas management; ii) Lack of coordination with other national institutions that implement infrastructure works that may affect protected areas and other green areas to optimize investments and

secure ecosystem services; iii) Lack of management plans and/or co-management plans for protected areas and action plans for management of other green areas within the AMA; iv) Lack of financial mechanisms to ensure resources to evaluate the overall condition of protected areas and other green areas, and to establish corridors and maintain protected areas for optimizing biodiversity conservation.

23. All this in a framework of low participation and involvement of the population in the improvement of their quality of life, especially in terms of gender equality. The gender analysis undertaken allows to highlighting two issues. The first one is the weak institutional structure for gender mainstreaming at municipal level, where of the project partners only the Municipality of Asuncion has a Gender Unit within its Social Area; however, its staff lack the capacities for a comprehensive approach to this subject. Municipalities currently lack urban land use and development plans mainstreaming gender issues, as well as capacities for analyzing budgets with a gender approach (e.g. how much is being invested in gender equality and specific aspects related to women). Participation of women in municipal governments is very low. Although the III Equal Opportunities Plan of the Ministry of Women includes a very comprehensive approach, in the 2015 municipal elections only one woman was elected as Mayor, and of the 265 Municipal Council seats, only 44 are occupied by women and of these only 18 are titular, while 26 are alternate⁶. This means that only 13% of these women occupy a public decision making position; hence the need to promote citizenship building to increase access of women to these spaces.

24. By removing these barriers, the project will promote an integrated planning and investment framework to create the building blocks that will steer the city towards a sustainable path in which equity and equality are central. As such, it is in line with national priorities established under the National Development Plan 2030; the Transport Master Plan, the National Logistics Plan, the National Environment Policy; the National Climate Change Policy; the National Disaster Risk Reduction Policy; the National Protected Area System Strategic Plan; and the Municipal Solid Waste Integrated Management Master Plan. The project is aligned with the GEF 6 Sustainable Cities Integrated Approach initiative. Furthermore, the project is consistent with the Sustainable Development Goals (SDGs). In particular SDG Goal 11 *Make cities and human settlements inclusive, safe, resilient and sustainable* and its targets 11.2 *by 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons*; 11.3 *by 2030, enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all countries*; 11.4 *strengthen efforts to protect and safeguard the world's cultural and natural heritage*; 11.6 *by 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management*; and 11.7 *by 2030, provide universal access to safe, inclusive and accessible, green and public spaces, in particular for women and children, older persons and persons with disabilities*.

⁶ Based on data of the “Tribunal Superior de Justicia Electoral”. <http://tsje.gov.py/>

III. STRATEGY

25. The objective of the proposed project is to improve the quality of life in the AMA and deliver multiple benefits to the whole of the population in accordance with their needs, through the integration of transport and solid waste management and green infrastructure into a framework for a sustainable and resilient city.

26. The project has been organized into five outcomes:

1. Enabling framework for a green sustainable city enhances integrated urban planning of the AMA;
2. Sustainable mobility and transport in the AMA for reducing GHG emissions from urban transport;
3. Improved chemicals and waste management system for reducing emissions of UPOPs, GHGs and toxic chemicals;
4. Emplacing and improving Protected Area and Urban Green Infrastructure management;
5. Dissemination of Lessons-learned, monitoring & evaluation

27. **Project Outcome 1** will take actions at systemic level, focusing on the medium and long term, and will have a broader geographical and thematic scope, focusing in the broader AMA and work over time scales and thematic issues that go beyond the current priority actions.

28. This outcome will develop the enabling framework for a sustainable city. This will be done through several approaches. One approach will be integrating sectorial planning and defining short, medium and long term goals through supporting the development of an urban land use plan and sustainable development plan⁷ for Asuncion and the other metropolitan area municipalities and covering multiple sectors, including sustainable transport, solid waste and chemicals management and green infrastructure. In the process of developing these plans, the outcome will build and enhance a culture of integrated and participatory planning on the basis of a long-term vision for a sustainable city where the national and municipal institutions, private sector and civil society collaborate and coordinate for an optimized and efficient use of resources and lastly an organized and sustainable development of the AMA's territory.

29. A second approach envisages capacity development for implementation and long term funding needs of the sustainable city plans. Institutional capacity development will focus on improving the capacity of institutions with mandates in sustainable city issues for planning, implementation and monitoring of urban, resilient, adaptive and sustainable growth. This will be done through training programs tailored to the specific needs of the project partners and key stakeholders (national institutions, municipalities, private sector and civil society) and by developing an information system to facilitate sharing information and knowledge between the concerned national and municipal institutions as well as facilitating access of civil society organizations and individuals to that information and knowledge as a means to disseminate information, raise awareness and promote participation. Training will also build the capacities to implement the proposed on the ground interventions under Components 2 - 4 below.

30. Furthermore, policy and regulatory instruments will be developed to support implementation of the field interventions in sustainable transport, solid waste and chemicals management, and protection of biodiversity. This includes assessments on solid wastes and chemicals to generate information leading to the preparation of regulations for their management, guidelines for management and inspection of hazardous wastes and guidelines and safeguards for closure of the Cateura dumpsite; regulations and

⁷ The Municipal Organization Law N°3966/2010 establishes the obligation of municipalities to plan their territories through an Urban and Territorial Land Use Plan and a Sustainable Development Plan. The Technical Planning Secretariat issued in 2015 the "Guide to Municipal Authorities" with guidelines to help the new municipal authorities who entered into office at the end of 2015 to develop the plans.

protocols for bicycle lanes; as well as a mobility and connectivity survey in the AMA to generate indicators to plan the public transport system and traffic oriented development.

31. Support will be provided to identify mechanisms to ensure the financial sustainability of the land use and sustainable development plan, including optimizing the tax collection processes to increase municipal revenues and prioritizing municipal investments in infrastructure (e.g. bicycle paths, walkways, green infrastructure); establishing the bases for implementing Payments for Ecosystem Services (PES) in urban areas through e.g. public works that are obliged to provide a 1% compensation for their environmental impacts; promoting public-private partnerships (e.g. for maintenance of green infrastructure) and promoting the recognition of the Bus Rapid Transit (BRT) project as a Nationally Appropriated Mitigation Action (NAMA) under the United Nations Convention Framework on Climate Change (UNFCCC) as a means to access new funding opportunities.

32. A third approach will be to develop and strengthen the inter-institutional and inter-sectorial dialogue and coordination, including with the civil society and private sector. This will entail creating and strengthening the Asuncion Autonomous Planning Institute (IAPA)⁸ envisioned as a high level technical body with competences in urban planning, institutional development, training, and policy development with the mandate of spearheading inter-institutional and inter-sectorial coordination in Asuncion to forward the uptaking and implementation of its Municipal Development plan prepared following the STP's 2016 "Guidelines for designing sustainable municipal development plans".

33. In addition, the Municipal Development Councils of Asuncion and AMA municipalities will be strengthened for an effective dialogue, coordination and participation. These multi-stakeholder Councils will emphasize the participation of the private sector and civil society and will work to encourage democratic participation and engagement in the joint stakeholder efforts to advance toward a sustainable city, covering a number of priority themes (e.g. citizenship and citizen participation, gender equality, social inclusion, solid waste management in homes and businesses, green infrastructure development, multi-modal transport). Functioning of these Councils will be supported at three levels, following STP's guidelines: i) Asuncion's Municipal Development Council, which will be a part of the IAPA; ii) the Municipal Development Councils of each Municipality of the AMA; (iii) the creation of the Platform of AMA Municipal Development Councils, in order to ensure the adequate integration of the AMA's LUP/SDP. The Municipal Development Councils and the Platform of AMA Municipal Development Councils will serve the purpose of helping public, private and civil society stakeholders to recognize themselves as equal and complementary partners in discussing and identifying solutions and actions to promote urban sustainability and resilience, and will accompany the preparation of the LUP/SDP under Output 1.1 -. To complement these efforts citizen participation protocols will be developed as well as an outreach strategy targeting civil society to raise awareness on sustainable city issues and facilitate access to information and knowledge on ongoing and planned public sector programs and investments. These dialogue and urban planning platforms will feed into the efforts toward the development of a national strategy for sustainable cities that will incorporate the experiences and lessons learned in the AMA for future replication to other cities in the country.

34. Capacities for Disaster Risk Reduction (DRR) will also be developed to enable confronting the risks posed by cyclical flooding and other urban hazards. This will include developing a DRR plan for the AMA that integrates the differentiated needs of the population and emphasizing in vulnerable groups. The plan will mainstream DRR and resilience in multiple sectors, including transport, solid waste management and green infrastructure. Moreover, an early warning mechanism will be developed to

⁸ The Municipality of Asuncion is currently undertaking the drafting and negotiations for the issuance of an ordinance to create the IAPA. See further details on the IAPA in the description of Output 1.5 below.

support the implementation of the DRR plan to generate and disseminate information on extreme events to decision makers, relevant institutions and the population for adequate decision making and local risk management.

35. Finally, this outcome will set up a monitoring platform for Monitoring, Reporting and Verification (MRV) needed to guide and adapt the AMA urban land use and sustainable development plans over time. The monitoring platform will be based on ongoing successful experiences and will monitor sustainable city indicators based on the indicators developed by the ESCI and the GPSC as well as other indicators that may be identified specifically for the AMA. Monitoring will include project relevant impact indicators (e.g. sustainable transport, solid waste management and chemicals, biodiversity, air quality, GHG emissions, water). In addition, management efficiency indicators related to integrated planning, transparency and citizen participation will be monitored.

36. Outcome 1 will mainstream gender issues through several strategies including: i) political and technical dialogue to ensure the participation of women in the development of the land use plan and sustainable development plan of the AMA, in multi-stakeholder platforms and other project processes; ii) specific training to build the capacities of public institutions for mainstreaming gender into the aforementioned plan, in institutional processes (e.g. gender sensitive budgets, generation of gender disaggregated data) and in citizen participation protocols, among others; iii) promoting participation and involvement of women in project activities (e.g. training activities); iv) developing actions to promote masculinities in institutions; and v) awareness raising on gender issues in the private sector.

37. Outcome 1 will provide the link to the Global Platform for Sustainable Cities (GPSC). In this sense the project will work with the GPSC to carry out joint activities and knowledge sharing to incorporate the use of geospatial data and tools to monitor the changes in the urban setting (e.g. development of green corridors and growth of green areas); establishing the indicators for urban sustainability under the MRV system to be developed, tools for integrated urban planning, and development of urban sustainability plans and enhancement of municipal planning and financing. Further details on collaboration with the GPSC are included in the description of outputs in Section IV below.

38. **Project Outcome 2** will take on the ground action to address the most critical problems of the transport sector within the AMA and reducing the sector's GHG emissions with a cross-scale approach, planned systematically at city, Bus Rapid Transport (BRT) corridor and bus stops. At the AMA metropolitan level, it is essential to coordinate economic, land use and mass transit network for efficiency and accessibility. At the corridor level, priority should be given to maximizing the accessibility impact of this mass transit line while ensuring integration in surrounding and balance mixed-use along this BRT corridor. At the bus stop level, it is necessary to create dense, diverse, vibrant, livable and inclusive communities adapted to local environment through people-oriented physical design⁹.

39. This will entail mainstreaming transport oriented development and information dissemination and traffic management strategies that will optimize the current efforts in the transport sector that still lack an integrated approach to resilience and long-term sustainability. While these interventions will be at the sector level, they will be interconnected with the proposed interventions under Outcomes 3 and 4 at city level thus offering substantial opportunities to identify and implement measures with cross-sectorial benefits and provide important inputs and guidance to the broader framework for a sustainable and resilient city under Outcome 1.

⁹ Adapted from the document "World Bank Group/GEF, Urban Week, Summary Report", of March 2016, Singapore.

40. The BRT system, known as the Metrobus will connect three of the main municipalities of the AMA (Asuncion, Fernando de la Mora and San Lorenzo) providing a solution to the low quality of public transport and promoting less use of private transport means. The first phase of construction comprises 18 km of exclusive lanes and 16 feeder routes with 26 main weather and traffic-protected stations. The project will seek to optimize the Metrobus by strengthening its sustainability, mobility and resilience through multi-modal transport oriented development. This will include the design and implementation of a bicycle lane system complementary to the Metrobus trunk and feeder routes and connecting with key protected areas (Asuncion Bay and Botanical Garden) and Asuncion's historical center with a total length of 100 kilometers, of which the project will support with GEF funding the construction of 30 kilometers. The other 70 kilometers will be paid and built with cofinancing from the Municipality of Asuncion. Design of the bicycle lane system will coordinate with the green corridor to be established under Outcome 4. Optimization of the Metrobus will also target the restructuring of bus routes that will be affected by its implementation through identifying the most appropriate routes and strengthening these with pilot eco-sustainable bus stop shelters to provide passengers with protection against weather and a safe place to wait for a bus, with special emphasis for the elderly, women, and children.

41. A second set of interventions will serve to improve traffic management in the city. This will include aggregating existing information and generating new information on traffic that will serve to outreach to citizens on the mobility status of the AMA and eventually an early warning system. A pilot monitoring plan will be undertaken to monitor the fuel consumption, GHG emissions and particulate materials of buses that will serve to raise awareness of bus companies and bus drivers on energy efficiency and motivating these stakeholders to make a more efficient use of the buses, reducing emissions while increasing their profitability. A number of pilot traffic management measures will be implemented in order to understand their effect on traffic management. These pilots could include e.g. parking charges and restrictions, temporal one-way street implementation, reversible lanes, traffic signs, and dedicated bus lanes in a major city street, and will provide opportunities to learn how to improve traffic fluidity.

42. A third set of actions will address developing vehicle emissions and maintenance standards to improve air quality; and based on these standards a maintenance guide for vehicles and a protocol for certification of public transport buses. These standards and guides will serve to implement a program for removal and scrapping of old buses through identifying the scrapping costs, value of the bus to be scrapped, secure scrapping processes as well as the environmental benefits of removing the old buses. The project is implementing these actions because there is no regulation at the national level that sets vehicle emissions and maintenance standards. At the municipal level each municipality is able to state their own standards and maintenance based only on their own experience. In the AMA, only the Municipality of Asuncion has air quality standards, which then again, are loosely applied due to lack of institutional capacity. With the new Air Quality law N° 5211 issued in 2014, which falls under the jurisdiction of the SEAM, vehicle emissions and maintenance standards will be set and enforced by the SEAM. With the GEF support, the SEAM will receive technical assistance to monitor the current air quality parameters in the AMA and set standards based on the current base line. The AMA municipalities will have to adapt their regulations based on this new law.

43. Outcome 2 mainstreams gender equality through several strategies, including: i) generating sex-disaggregated data for traffic related information that will serve as inputs for traffic management measures; ii) measures to facilitate a more efficient use of transport by women, such as access to key places for them (e.g. schools, health centers); and iii) safety measures to reduce gender based violence in public transport.

44. Over the project's duration, these interventions are expected to reduce 255.100 tCO_{2e} (combined emissions reductions of the bicycle lanes and the Metrobus) as well as air pollutants, and benefiting health and quality of life of the metropolitan population.

45. For the City of Asuncion, it is expected that the Global Platform for Sustainable Cities can provide a collaborative space for increasing national capacities for transit oriented development; in order to engage national policy-makers and city planners with entities worldwide already working in the field of climate change resilience, in integrated urban planning, and in green infrastructure.

46. Project Outcome 3 will seek to reduce the emissions of mainly UPOPs (dioxins and furans) as well as some toxic chemicals generated through two potential sources: i) inadequate management (burning) of MSW in dump sites (formal and informal) and electronic wastes; and ii) inadequate management of other materials and chemical residues such as obsolete pesticides or their containers with remains, including POP pesticides. To achieve this, the project will pilot an integrated MSW and hazardous waste management system (separation-collection-transport-classification-packaging-recycling) that will help national and municipal institutions increase their knowledge on the system and acquire experience to implement it; including the execution of three demonstration projects.

47. One demonstration project will address the adequate management of illegal dumpsites in critical sites, namely the RBSMBA to reduce potential environmental and health hazards due to the release of UPOPs in a protected area of key importance to migratory bird species. In coordination with Output 4.1 below, this pilot will demonstrate the feasibility of recovering and cleaning the protected area, while at the same time generating social benefits through the employment of informal waste pickers for cleaning up and monitoring the reserve to avoid further dumping of MSWs.

48. A second demonstration project will pilot the collection and separation of 10 ton/day of MSW, which is the waste generated by a community of 10,000 people, in an area representative of the AMA. This pilot will serve to demonstrate the potential of recovering materials for further recycling as well as Best Environmental Practices (BEP) and Best Available Techniques (BAT).

49. The third demonstration project will pilot the recycling of 6 ton/day of MSW to recover value contained in the wastes. It will also serve to demonstrate how BEP and BAT can benefit the productive chain in integrated MSW management. This will include cost-benefit analysis of recovery, recycling and value adding, development of business plans identifying the most feasible operations, e.g. plastics, electronics, cardboard and paper, and small scale enterprises. This pilot will also promote the labor insertion of informal waste pickers into these enterprises.

50. The three pilots will provide valuable lessons for implementation of the MSW Management Master Plan. This plan identifies six alternatives for MSW management¹⁰, of which alternative #4 has been selected, however the institutions lack experience in implementing this type of waste management. Therefore these pilots will contribute to build technical capacities for implementation and for leveraging of the funds necessary to implement the master plan. Furthermore, the three pilots will generate formal employment for 50 waste pickers (mainly women) thus setting example on safeguarding livelihoods, legitimizing informal workers, improving their working conditions and generating financial gains for these beneficiaries. Gender mainstreaming will therefore be an important aspect of the interventions. This will be done through identifying the positive measures that are needed to ensure the participation of female waste pickers (*gancheras*) and improving their livelihoods. Examples of these measures could include: i) facilitating access to children to educational or care-taking centers while the mothers are

¹⁰ The alternatives identified by the MSW Master Plan are: 1) construction of a transfer station/separation and classification plant (TS/SP) in the municipality of J.A.Saldivar to receive wastes from 9 municipalities (all outside the AMA) for further transfer and final disposal at El Farol dumpsite; 2) construction of a TS/SP in J.A. Saldivar as per alternative 1 plus construction of another TS/SP in the municipality of Luque to receive wastes from 8 municipalities (in and outside AMA) and transfer to El Farol; 3) construction of a TS/SP in the municipality of Luque as per alternative 2 and a new landfill in the municipality of Ita; 4) combination of alternatives 2 and 3; 5) construction of 10 TS/SP besides the landfill in Ita; 6) Does not consider construction landfill in Ita therefore the wastes of the 10 TS/SP would go to El Farol.

working; ii) training with the participation of spouses on masculinities, sexual and reproductive rights and economic empowerment; and iii) advice on access to municipal and national social programs. In addition, awareness raising activities to improve household waste management will benefit an important number of women in the community where the collection-separation-recycling pilots will be established. The results of these pilots will also help in developing a 3R (reduce-reuse-recycle) strategy.

51. These three pilots are expected to result in a total UPOPs release reduction of 13.2 g-TEQ. This benefit will be expanded through reducing POP containing materials that may be dumped in the landfills and may percolate to underground water or water bodies around the landfills. A secondary benefit will be GHG emissions reduction of 110 tCO_{2e} over the project's duration as a result of better solid waste management. Local environmental benefits will include the reduction of possible toxic metals and POPs contained in certain hazardous wastes, particularly electronic and technological wastes. Furthermore, waste management will accrue co-benefits for biodiversity (Outcome 4) through improving habitat conditions for migratory bird species in the RBSMBA and health through reducing problems with vermin and conditions for reproduction of *Aedes aegypti* mosquitoes.

52. **Project Outcome 4** will develop a reference framework for strengthening the management effectiveness of urban green areas under an ecosystem approach and promoting their sustainability in the medium and long term. The outcome envisions a green corridor connecting a network of 40 core public green areas (protected areas, natural reserves, parks and plazas) and a buffer zone comprising private green areas (patios, backyards) in built-up areas surrounding the core areas, as well as future planned riverside linear parks. The corridor, managed under an ecosystem approach and mainstreamed into the land use plans to be developed under Outcome 1 above, will provide the unique opportunity of developing a model for urban biodiversity conservation with clear benefits for the city, including reduction of air pollution, increased resilience, connectivity, health, and public recreation, as well as ensuring maintenance of carbon stocks. It will also provide the framework for implementing PES schemes to be developed under Outcome 1. The corridor will be also linked to Outcome 2 interventions, namely the design of the bicycle lane system. The improved management of the urban protected areas and the green corridor will provide ecosystems services that will be monitored (e.g. carbon, air quality, flood prevention and BD) and will be the framework through which the PES system developed under Component 1 will be channeled. For this a specific tool will be developed for measuring management effectiveness of the corridor so it can be used as a proxy to determine PES payments. Other funding sources for the protected areas will come from actions such as bird watching and public concerts.

53. A first set of interventions will address strengthening the management of biodiversity important public protected areas within Asuncion, namely the RBSMBA, the *Jardin Botanico y Zoologico de Asuncion* (Asuncion Botanical Garden and Zoo- JBA) and the *Parque Guasu Metropolitano* (PQM), which will be core areas of the corridor. These areas cover 541 hectares (of which 300 hectares are in the SINASIP. This will be done through developing their management plans, financial sustainability plans, capacity building for implementation and restoration of habitats for migratory bird species in the Asuncion Bay. Key capacity building interventions will address targeted training of institutional and protected area staffs on protected area management related themes, establishment of the RBSMBA management committee and developing the *Parque Guasu* Information and Educational Center as the main hub for the project's awareness raising programs on the sustainable city.

54. A second set of interventions will have a wider scope at city level and will entail developing guidelines, regulations, strengthening tree nurseries to provide seedlings for planting in green areas and along bicycle lanes, and preparing educational materials and awareness raising of authorities, institutions (public, private and civil society) and the population in general (within the corridor's buffer zone as well as the rest of Asuncion and metropolitan area) for better management of the corridor and encouraging the active involvement of all stakeholders through enhancing their awareness on how to make the best use of

the corridor sustainably, and how to get involved and contribute to conserving biodiversity not only within the corridor but in their own neighborhoods outside. In this manner, natural systems will be promoted to increase the resilience of urban infrastructure, mitigate the impacts of severe rain and flooding, and improve the quality of urban walkways and bicycle lanes that interconnect the city.

55. This outcome will help revert the current biodiversity levels of the Asuncion Bay so that they will eventually get back to 1% of the global population, as was the case before the area suffered the impacts of construction of the *Costanera*. Over its duration, the project will help increase visiting populations of 5 globally significant migratory bird species in Asuncion Bay: Buff-breasted Sandpiper; American Golden Plover; Lesser Yellowlegs; White-rumped Sandpiper and Pectoral Sandpiper (*Calidris melanotos*) from current 121 individuals (sum of all individuals of the 5 species observed in the Asuncion Bay in 2015) to 7,000 individuals. The green corridor will also contribute to maintain carbon stocks, estimated at 972,232 tCO_{2e}. The improved management effectiveness of the above-mentioned protected areas will be measured through the METT scores as follows: i) *Banco San Miguel* and *Bahia de Asuncion* Ecological Reserve (baseline score: 31, target score: 80); ii) *Parque Guasu Metropolitano* (baseline score: 41, target score: 85); and iii) *Jardin Botanico y Zoologico de Asuncion* (baseline score: 52, target score: 90).

56. Outcome 4 will mainstream gender through three types of measures: i) facilitating access of women to green areas through a more efficient public transport system (Outcome 2) and ensuring safety through lighting, access and surveillance; ii) communication and awareness raising campaigns linking environmental conservation issues with traditional knowledge (e.g. use of plant species with medicinal purposes) through information materials, seminars and exhibitions in public spaces within the green corridor; and iii) generation of micro-enterprises for employment generation (e.g. urban tree nurseries managed by women with species adequate for the corridor, tour guides).

57. **Project Outcome 5** will provide the necessary means for the monitoring and evaluation (M&E) of project results in order to inform adaptive management of the programme and improve the implementation of the project. Mid-term (MTE) evaluation will be executed between the second PIR and third PIR and terminal evaluation (TE) will be prepared by independent evaluation teams and compiled into reports. Outcome 5 will also enable consolidation of lessons learned extracted throughout the course of the project's implementation and support dissemination of lessons-learned and experiences at national, and in collaboration with the GPSC at regional and global levels. The project will systematize and publish best practices and lessons learned, which will help ensure access to this information by the wider stakeholder community to the experiences, failures and successes of the pilots undertaken by the project.

58. Project design takes into account the assumption that achievement of the proposed outcomes relies heavily on the willingness of the national and sub-national institutions to overcome the predominant culture of short term planning, sector-based solutions and the influence of political interests in prioritizing interventions, that results in inefficiencies, superposition of actions, and missed opportunities for inter-sectorial collaboration. There is an increasing recognition of the need of developing a discipline of coordinating and collaborating under a common long term vision, incorporating citizen participation and gender issues in the processes leading to the construction and implementation of plans, programs and regulations that are needed to achieve this vision; and allocating the necessary budgetary resources for investments to advance toward the sustainable and resilient development of the AMA. The strategy explained in detail above is therefore expected to result in an improved integrated approach to planning and allocating resources to define overall objectives, identify synergies and exploit the cross sectorial benefits of integrated actions.

59. The strategy is built upon the active participation of public, private and civil society partners and aims to develop an enabling framework for a sustainable and resilient city that integrates transport and solid waste management and green infrastructure to improve the quality of life in the Asuncion

Metropolitan Area and deliver multiple benefits in terms of reducing GHG, UPOPs and toxic chemicals emissions, and air pollution; increased resilience, connectivity, health, and public recreation, as well as ensuring maintenance of carbon stocks (see also Figure 1 – Theory of Change).

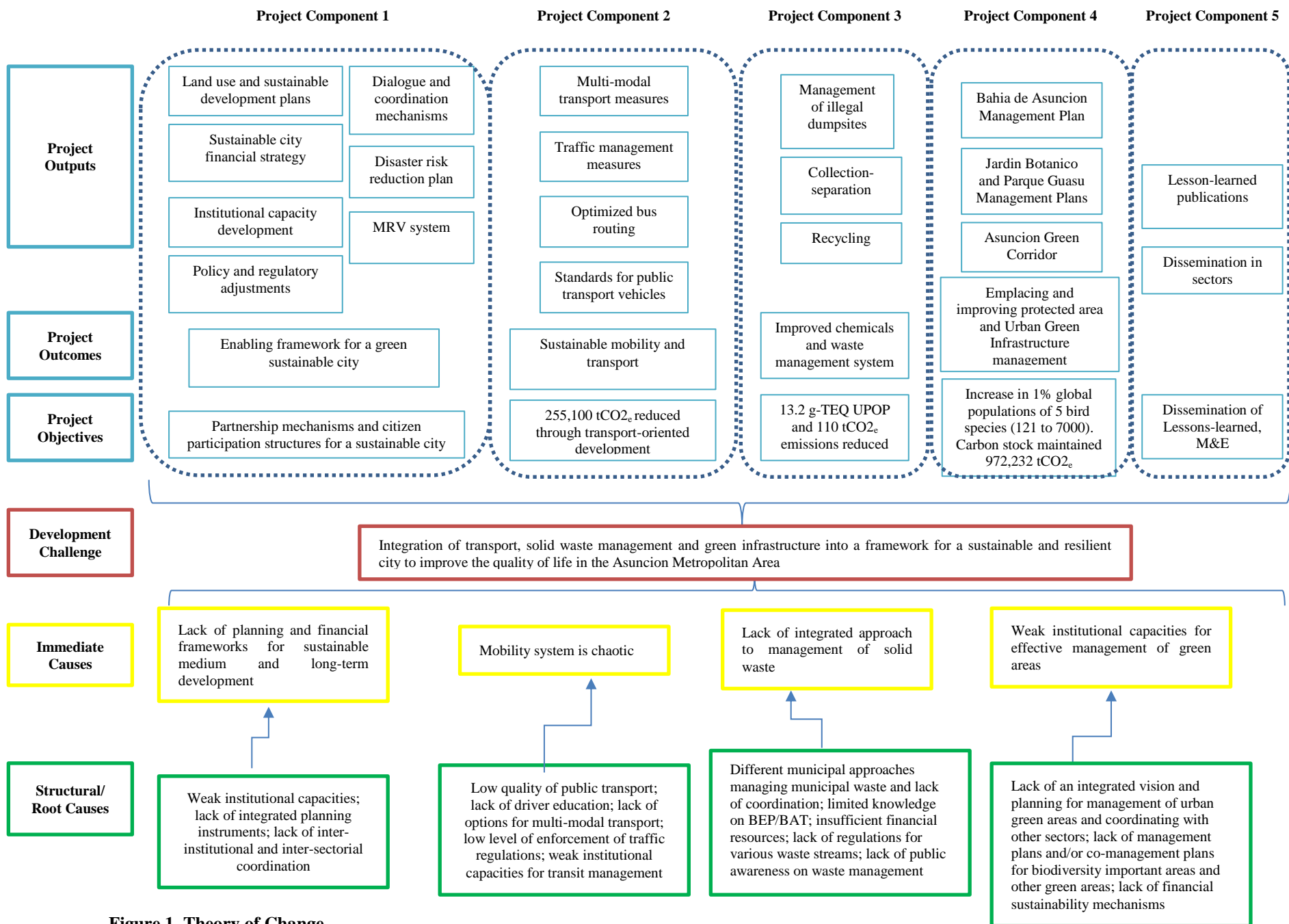


Figure 1. Theory of Change

IV. RESULTS AND PARTNERSHIPS

i. Expected Results:

60. The principal outputs of the project, which will support the achievement of the project's five (5) outcomes, are the following:

61. **Outcome 1:** Enabling framework for a green sustainable city enhances integrated urban planning of the AMA

62. *Output 1.1: Asunción Metropolitan Area (AMA) Land Use Plan and Sustainable Development Plan covering multiple sectors*

63. This output will build and strengthen a culture of integrated long term planning fostering inter-institutional and inter-sectoral coordination between national and municipal institutions to optimize the use of resources and promote the development of the AMA in a coordinated and organized manner. The project will support the AMA municipalities in the development of their Land Use Plans and Sustainable Development Plans (LUP/SDP)¹¹, in an integrated manner.

64. Key institutional stakeholders to be involved include the AMA municipalities and their Municipal Development Councils; the Technical Planning Secretariat (STP) to ensure alignment with the STP planning guidelines and the National Development Plan 2030; the Environment Secretariat (SEAM) for alignment with land use planning guidelines, the National Environmental Policy and the National Climate Change Policy; the Ministry of Public Works (MOPC) given the important infrastructure works within the AMA, the National Emergency Secretariat (SEN) in charge of DRR; and the Ministry of Women to ensure mainstreaming of gender issues. CSOs and private sector will also participate in the development of the urban plans jointly with the afore-mentioned institutions within the dialogue platforms to be established under Output 1.5 below.

65. Development of the plans will build upon the ESCI Action Plan. Work will begin in project year 1 (PY1) with the elaboration of an action plan defining the technical and methodological aspects including stakeholder and citizen participation. The Municipality of Asuncion will be the first to prepare its plans and the remaining municipalities will be gradually incorporated in the process. In PY2 the Asuncion LUP/SDP will be finalized and five (5) new municipalities will initiate their plans. These five (5) LUP/SDPs will be finalized in PY3 and the remaining five (5) municipalities will begin their plans. In PY4 the last plans will be finalized and implementation of the ongoing plans will be evaluated and adjusted. In PY5 the 11 LUP/SDPs will be integrated into a single AMA LUP/SDP under a common vision and long term goals.

66. The AMA LUP/SDP will integrate key sector plans: i) Sustainable Urban Transport Master Plan linking the BRT system (Metrobus) and other means of transport, both motorized and non-motorized, and multi-modal initiatives; ii) Solid Waste and Chemicals Management Plan providing the basis for implementation of pilot projects; iii) Green Corridors Plan linked to the new transportation schemes and connecting parks and natural urban ecosystems; iv) Mitigation and Adaptation Plan; and v) Urban sustainability indicators and MRV plan. The proposed LUP/SDP integrating the different sectors will

¹¹ The Municipal Law 3966/10 stipulates that municipalities have the role of planning their territories through a Sustainable Development Plan and a Land Use Plan. The new municipal authorities entered into office in December 2015 and have the mandate of preparing these plans.

shape AMA's urban form or spatial distribution of urban activities in an efficient and inclusive way through hierarchization and prioritization of public interventions over key areas where the LUPs will be more accurate and detailed (through zoning orientations); taking into account and accompanying economic development by optimizing the land use of economic activities and developing long term strategies within a dialogue and agreement process; favoring connectivity with the most excluded areas; developing a global and voluntary policy as well as a specific methodology within AMA settlements; developing an articulated policy for public infrastructure and services between municipalities; managing legal assistance of the LUPs with flexible and practical instruments; linking the different problems within the AMA based on a systemic approach; and integrating a dynamic principle to ensure not remaining in a static and rigid process.

67. At the same time, these plans may provide incentives to priority investments based on several types of actions: compact urban strengthening and development of urbanized areas; developing a voluntary public policy for land purchasing; optimized orientation of properties in developable areas; planning urban development in developable areas in phases to give enough time to equip the new areas; generating fiscal incentives for areas considered strategic; facilitating construction regulations (height, density, land use) in strategic areas; shortening mobilization distances by integrating employment areas and density principles; taking into account the value and protection of green areas (e.g. forbidding construction or under certain conditions) and hydrological networks; and integration of specific habitat, economic, environmental and mobility strategies in LUPs.

68. Implementation of this output will be linked to Output 1.5 below, which will ensure dialogue and participation mechanisms through the municipal development councils and the platform of AMA municipal development councils emphasizing in civil society and private sector involvement. These will provide for stakeholder participation and inputs in development of the LUD/SDP.

69. Measurement, Reporting, and Verification (MRV) methodologies developed by the GEF Global Platform for Sustainable Cities, are incorporated into the Asuncion urban planning and design. The GPSC may provide support to this output through expert review of the LUP/SDPs and processes, including: overall vision; common metrics and a consistent terminology through application of tools such as ISO 37120 and the C40-ICLEI-WRI greenhouse gas emissions inventory¹², choice of performance indicators for urban sustainability; identify key components of geospatial data infrastructure development, robustness of evidence base; quality of stakeholder engagement; prioritization and ambition of actions; degree of political support and co-ordination; assignment of responsibilities; identification of resources; adequacy of MRV system.

70. Gender mainstreaming will be a priority in the development of the sustainable city plans and will be approached at three levels: i) political level dialogue with the authorities of the key concerned institutions (municipality, SEAM, STP, SEN, MOPC) to raise awareness on the importance of gender equality in development processes; ii) training-of-trainers workshops for technical level staff of the institutions on Gender and LUP/SDP to build the capacities for gender mainstreaming; and iii) a space with women's organizations that could potentially be strengthened and participate actively in the development of the plans through identifying their strengths and if necessary, targeted capacity building. The technical level workshops will be replicated in the municipalities by the participants of the first workshop to build their capacities for gender mainstreaming in the development of their respective plans.

¹² Ref.: "A common platform to help build sustainable cities for SCIAP Consultative Meeting", IAP/GEF, Aug. 25, 2014.

71. *Output 1.2: Sustainable city financial strategy for increased allocation of funds and sustainable investments in transport, solid waste management and chemicals, and protected areas/green areas for biodiversity conservation*

72. The project will provide support in identifying mechanisms to ensure the financial sustainability of the AMA LUP/SDP. This will be undertaken through four approaches.

73. *Municipal tax collection management strategy:* One approach will entail the development of a strategy to improve municipal tax collection management. This strategy will be developed with the Municipality of Asuncion given that Asuncion concentrates all the services and carries a large weight in terms of providing services to nearly 2 million people that come into the city everyday, albeit only 20% of that population pay taxes in Asuncion¹³. Development of the strategy (PY1) will include an assessment of current procedures and performance and a proposal of the necessary adjustments to improve collection thereby increasing the capacity of the municipalities to allocate increased funding to implement the programs and projects identified in their development plans. As part of the assessment, potential partnerships with the Ministry of Finance (MH) and with other municipalities will be explored to develop crosschecking mechanisms through information exchange that may help establish requirements to improve collection. The strategy will be implemented by the Municipality of Asuncion beginning PY2 and will be made available to the other AMA municipalities for replication from PY3 onwards.

74. *Payment for Environmental Services:* A second approach will be to establish the bases for implementation of PES at urban level so that municipalities may be able to certify green areas and their ecosystem services under the Environmental Services Valuation and Retribution Law #3001/06. Under the provisions of the law there is a compulsory market comprised by interventions (e.g. infrastructure works, industries) with environmental liabilities that must compensate ecosystem services, e.g. private or public projects considered to have a high environmental impact (these must allocate 1% of their budgets to purchase certificates) or offenders of environmental regulations who are obligated to compensate for the environmental damages in which they have incurred. By certifying urban ecosystem services municipalities would be able to access funds through the transaction mechanisms foreseen by the law, namely: i) Direct transactions e.g. between the municipality and private sector projects and/or offenders of the law; and ii) Purchase of certificates by the MOPC under its 1% obligation to compensate for infrastructure works^{14 15}. These funds will serve to improve and increase the green infrastructure of the municipalities.

75. The project will in PY1 and PY2 support the SEAM by undertaking a study to identify the urban ecosystem services that may fall under the certification process as well as a valuation study of the identified services. Valuation will include determining the opportunity cost of conserving green areas and their ecosystem services, and calculating the nominal prices as foreseen by the law. Based on these studies the project will work with the SEAM to propose the regulations containing the identified ecosystem services, prices, and the procedures for their certification. Project support will also include technical assistance to strengthen the SEAM's monitoring system to include monitoring of these urban

¹³ An internal evaluation undertaken in 2015 estimated a tax morosity of USD 17.5 million by 50 large companies. A general audit is being undertaken by the Municipal administration to determine the real amount owed by taxpayers. Preliminary assessments estimate an amount higher than above-mentioned. Likewise, failures have been detected in the monitoring system and mechanisms to prevent and detect tax evasions. Currently only 19% of the municipal budget is destined to investments in infrastructure works, which in 2015 represented USD 27.3 million. If municipal tax collection improves, it is estimated that the allocation to infrastructure works could be increased up to 30% of the municipal budget.

¹⁴ The MOPC launched at the end of 2015 a tender to acquire certificates as a first experience under its legal obligation.

¹⁵ A third transaction mechanism foreseen is the negotiation of certificates in the stock market. However this mechanism currently faces several constraints for implementation. The UNDP/GEF Green Production Landscapes Project will provide support to overcome current shortfalls, and enable the functioning of this mechanism. Once the mechanism is operational, municipalities will be able to make use of it.

ecosystem services, including improved information exchange between relevant institutions that may be involved in certification processes (eg. MOPC, municipalities, National Cadastre Service, Public Registry) as well as targeted training of SEAM and others to reinforce monitoring and surveillance of the certified urban green areas. Awareness-raising will also be undertaken with private sector associations and chambers (e.g. construction sector) to encourage them in purchasing certificates within the framework of potential high impact projects; as well as with judges and public attorneys so that fines and monetary penalties be destined to purchase of certificates.

76. *Recognition of the Metrobus as a NAMA:* The project will support the SEAM and MOPC to promote the recognition of the Metrobus as a NAMA, hence providing opportunities to access new financial sources addressing sustainable urban transport and linked to the strengthening of biodiversity important areas and climate change adaptation through the green corridor to be established. In PY1 the project will support the SEAM in preparation of a NAMA development guideline, which will include the NAMA development cycle (development process, GHG reduction estimation methodologies, technical and financial analysis) and MRV. Based on these guidelines the Metrobus will be proposed for recognition (PY2). In addition, during preparation of the guidelines, other potential NAMAs within the AMA may be identified and shortlisted for future development. The guidelines will be useful at national level thereby providing the increase of opportunities for financing and implementation of GHG emission reduction related activities, as well as in continuous monitoring and reporting of emission reductions in concrete activities that will help enhance policy making for sustainable economic development and climate change mitigation.

77. *Public-private partnerships:* The Municipality of Asuncion has a long time experience in developing public-partnerships mainly for maintaining plazas or sidewalks, and planting trees in association with private sector businesses. Other municipalities of the AMA also implement such partnerships. This activity will explore the opportunities of establishing public-private partnerships under the Public-Private Partnership Law #5102/13¹⁶. In PY1 the project will support in identifying mechanisms to implement partnerships between the municipalities and the private sector under the scope of such law for potential projects that may be identified during the course of developing the LUP/SDPs (Output 1.1). This will also include identifying other types of partnerships based on current experiences, including partnerships with academic institutions and CSOs.

78. *Land value capture:* The project will technically support the AMA municipalities in PY1 in undertaking an economic, social and environmental feasibility study of the potential for implementing this mechanism to recover the partial or total increase in the value of private properties as a result of public investments in the area of influence (e.g. Metrobus routes) through taxing the direct beneficiaries of such investments. Based on the results of the study, the project will assist in designing the mechanism, including the elaboration of the corresponding municipal regulations, as well as disseminating information and raising awareness of citizens on the new mechanism.

79. This output will link to the GPSC through short-term technical assistance and expertise to aid in developing the above-mentioned financial mechanisms. This may include issues such as: input on technical or technological solutions relevant to the financial sustainability strategy; assessment of costs of city-scale sustainability options; identification of financing sources; identification or development of financial engineering tools; identification of development of city-scale abatement cost curve.

¹⁶ The law has the objective of promoting public-private partnerships to implement infrastructure and services projects (e.g roads, trains, ports, airports, waterways, improvement of river navigation); social infrastructure; electric infrastructure; urban improvement, equipment and development; water supply and sanitation; among others.

80. Also, in close collaboration with the GPSC, other objectives for this project are to share knowledge and operational expertise on public-private partnerships, to enhance opportunities for exchange between the public and private sectors on the issues that need to be addressed in order to attract private sector involvement in public infrastructure, and to provide an opportunity for networking among the public and private sectors of different countries that are associates of the global platform.

81. *Output 1.3: Institutional capacity development program for integrated urban planning*

82. The project will develop an institutional capacity strengthening program to build the capacities for mainstreaming integrated urban planning in institutional planning processes and enabling the relevant stakeholders to implement, monitor and evaluate the sustainable city plans developed under Output 1.1, as well as the pilot interventions under Outcomes 2-4 below. Capacity development will be undertaken through a threefold approach.

83. *Training plan:* The first approach will be a training plan targeting national and municipal institutions, private sector and CSOs. During the project design phase, capacity assessments of the SEAM, Municipality of Asuncion and MOPC were undertaken following the UNDP Capacity Scorecard (see Annex H for results), as well as consultations with other institutions (including CSOs) which provided valuable information to identify a preliminary training program, including thematic areas, beneficiaries and training formats among other aspects (see Annex J for further details). A detailed training program and action plan will be designed in PY1, and the training program will be implemented throughout the project's duration. In addition, a Sustainable City Capacity Scorecard will be developed in PY1 to track the improvement of the institutional capacities of the three institutions (and others that may be included during implementation) in planning, implementation and monitoring of urban, resilient, adaptive and sustainable growth. The Sustainable City Scorecard will be completed at mid-term and end of project as part of the project's M&E (Outcome 5).

84. The training plan will mainstream gender equality through several strategies. The project will undertake a capacity assessment of the Municipality of Asuncion and based on the results will incorporate specific activities into the training plan. These will address mainstreaming gender equality in the LUP/SDP (Output 1.1); elaborating gender sensitive budgets (Output 1.2); generating and analyzing data (related to transport, waste and biodiversity pilots) and reviewing the citizen participation protocols (Output 1.5). A Gender Committee will be established within the Municipality's Social Area, which will be in charge of forwarding the gender-related capacity building efforts. Furthermore, the training plan will incorporate targeted training on gender and sustainable development (linked to the SDGs) directed to the STP, SEAM, municipalities and CSOs, as well as on gender equality in businesses, directed to the private sector.

85. Within the themes identified in the plan, the specific services to be provided by the GPSC will be detailed, which may likely include short-term technical assistance and expertise for consultant-led trainings on: i) fundamentals of urban governance; ii) financial management; iii) different systems and processes relevant to data, analytics, or other tools (e.g ecosystem services valuation to implement PES, climate change vulnerability assessments, GIS-based maps/studies exploring alternative development patterns linked to Outputs 1.1, 1.2 and 1.7); and ii) data collection, processing and management strategies, using geospatial data as an urban planning tool, methods for validating the information reported, integrating data and indicators into the AMA urban planning process for achieving policy, objectives, and different mechanisms available to share data with other cities around the world; among others. The training plan will be implemented throughout the project's duration, building the capacities of 150 government and private sector technical staff, 80 private enterprises and 15 CSOs of the AMA.

86. *Sustainable City Information and Knowledge system:* The second approach will entail developing a Sustainable City Information and Knowledge system. This system will systematize data and information on ongoing and planned initiatives within the AMA, transport, solid wastes and chemicals, and protected areas/green areas and biodiversity, as well as the sustainable city indicators to be monitored by the MRV system (Output 1.7). It will build upon the SEAM's Environmental Information System (SIAM) under development, and generating modules on sustainable city themes with the STP, MOPC, AMA municipalities, SEN and CSOs (e.g. Sustainable Cities Network, Federation of Neighbor Associations of Paraguay- FEDEM). The system will be web-based to enable public access, thus facilitating access of CSOs and individuals to information and contributing to citizen participation (linked to Output 1.5 below). The system will be designed in PY1 and PY2. This will include a diagnosis of the existing information systems; inter-institutional dialogues and agreements on the type of system to be designed; the institutional and implementation arrangements for management and maintenance of the system, including institutional budgetary allocations; citizens' information interests and demands; and detailed design. It will be implemented from PY3 onwards.

87. In the context of The Sustainable Cities IAP and its common platform, information and knowledge obtained from this second approach is a key aspect to embrace global environment perspective to better understand how information of the AMA can be relevant within the context of the global urbanization challenges and why this metropolitan region is important from the global environmental perspective.

88. *Communication plan:* The third approach will involve developing a communication plan to disseminate information to institutions as well as civil society on the ongoing and planned plans, programs and projects of the municipalities, SEAM, STP, SEN, MOPC and CSOs within the AMA (transport, solid wastes and chemicals, green infrastructure) as well as progress in monitoring the sustainable city and urban indicators and their contribution to the SDGs. The communication plan may also eventually serve to provide information on municipal budgets and accountability. The plan will be designed in PY1 taking into account information needs and demands of the institutions and civil society. It will establish the links to the current communication strategies of the participating institutions and how these will feed information into the plan. Design will also include communication formats (e.g. news bulletins, press releases, periodic reports, radio and TV interviews, websites, social media) as well as the institutional and budgetary arrangements to implement and sustain the plan. The plan will be implemented throughout the project's duration, monitored and evaluated, and adjustments made as necessary.

89. *Output 1.4 Policy and regulatory adjustments to improve integrated urban planning*

90. This output will support the development of necessary policy and regulatory adjustments to support institutional strengthening of the transport and solid waste management sectors covered by the project, as well as to support the implementation of the pilot interventions under Outcomes 2-4.

91. *Transport:* Between PY1 and PY3 a mobility and connectivity survey of the AMA will be undertaken to understand where people come from, how and where they go within the AMA, and including gender-disaggregated data. The objective of the survey will be to aggregate information from different sources and produce indicators and tools to help in planning the public transport system and traffic management in general. For transport oriented development, the project's integrated approach that coordinates national policy-makers with municipal authorities by establishing policy and regulatory interlinkages as well as to implement low-emission pilot interventions in sustainable transport, creates an alternative path to the business-as-usual practice in which public investments in transport are often

undertaken independently by different institutions at the national level without the coordinated integration of the affected municipalities.

92. *Chemicals and waste management*: The project will support the SEAM in PY1 and PY2 in developing a baseline assessment of hazardous substances (focused on global pollutants). A detailed study will assess the generation of hazardous wastes at national level and in the AMA and will enable the SEAM to plan the management of hazardous wastes. It will also complement the study on generation of MSW of the MSW Management Master plan. This work goes beyond what will be determined in the updating of the Stockholm National Implementation Plan (NIP) and what will be obtained in the Minamata Convention Initial Assessments (MIA) since these make up only a fraction of the hazardous wastes in the country.

93. Between PY3 and PY4 an inter-municipal coordination agreement will be promoted and established between the AMA municipalities to provide a framework for implementing the inter-municipal Solid Waste Management Plan prepared under Output 1.1 above. The project will propose regulations and guidelines to aid in the implementation of the integrated management of chemical wastes and components they release (e.g. tires, e-waste, mercury containing wastes), namely: i) a municipal ordinance for management of hazardous substances, which is currently lacking, and based on the above assessment; and ii) technical guidelines for management and inspection of hazardous wastes. The guides will contain technical and legal information to strengthen surveillance in MSW management, mainly in regards to hazardous wastes. They will include methods to identify hazardous wastes in MSW and how to quantify them; approved chemical analysis methods; and environmentally adequate management practices (neutralization, chemical or thermal destruction, controlled confinement, co-processing and recycling). Main hazardous and industrial wastes will be those that may contain POPs, Mercury, and biological infectious wastes, among others. Training on inspection of waste streams will be provided through Output 1.3 to inspectors and authorities of the SEAM and municipalities.

94. Between PY2 and PY4 the project will support the SEAM in the closure process of Cateura through developing guidelines and safeguards (in connection with international experience through the GPSC) that will be implemented by the SEAM, the Municipality of Asuncion and the concessionaire. Project support will include reviewing the feasibility of the best option identified in the MSW Management Master Plan (or supplement it, if were the case), complementing the generation study, elaborating an awareness raising guide to better management of MSW targeting the population in general and mainstreaming international best practices for closure of the landfill.

95. *Output 1.5 Inter-institutional and inter-sectorial dialogue and participation mechanisms for integrated urban planning*

96. Through this output the project will support the development of two types of mechanisms to promote the permanent dialogue and coordination between national and municipal institutions, private sector and civil society. One mechanism will entail the strengthening of the Asuncion Autonomous Planning Institute (IAPA) and the other will address the strengthening of Asuncion and AMA Municipal Development Councils that will feed into urban planning processes at national levels.

97. *IAPA*: The IAPA is envisioned as an autonomous and autarchic planning institute with the key role of leading and following the reform processes necessary to emplace the Asuncion development plan. The project will provide technical assistance to support the Municipality of Asuncion in creating and

developing the capacities of the IAPA for integrated urban planning enabling it to fulfill its proposed responsibilities¹⁷. In PY1 the project will provide technical assistance to consolidate the IAPA's governance system and organizational structure, including organizational manuals, staff job descriptions and performance evaluation system. This will include promoting the equal participation of men and women in staffing of the IAPA's management, technical, administrative and operational levels. Support will include developing the IAPA's strategic plan including budget and financing sources and an M&E system of the strategic plan and its annual work plans. The Municipality of Asuncion will assign the necessary infrastructure and staff to the IAPA (PY1-2) and the project will supply minimum basic equipment to support the implementation of the strategic plan (e.g. desktop and notebook computers, GPS, projectors and others to be defined during detailed consolidation). IAPA staff will participate in the training program under Output 1.3. In addition, the project will support inter-institutional dialogues through workshops and meetings at political and technical level with central government institutions and AMA municipalities as part of the process of identifying synergies and reaching agreements as to the roles of the IAPA in the different processes pertaining to urban sustainability in coordination with the central government and other municipalities.

98. The project will promote citizenship building. This will be done through the development in PY2 of citizen participation protocols. Design will pay special attention to gender mainstreaming, social inclusion and vulnerable groups through specific methodologies and working jointly with the municipal council (see below). These will be key in promoting participation of civil society in processes related to planning, implementation and monitoring of urban sustainability.

99. *Asuncion Municipal Development Council*: At municipal level, the project will support the functioning of the Municipal Development Council as a space for inter-institutional and multi-stakeholder dialogue and action, emphasizing in civil society and private sector. This Council will constitute the mechanism to convene and coordinate the public and private sectors and civil society in urban sustainability matters and will be integrated into the IAPA. In PY1 the project will support the functioning of this Council, through stakeholder mapping, elaboration of an organization structure and terms of reference for its functioning, and will promote agreements between the different sectors involved to ensure adequate representation of women, vulnerable groups and disabled persons. This will also include the exchange of experiences with other cities at regional and/or international level (in coordination with the GPSC and for example the Institute for Research and Urban Planning of Curitiba - IPPUC) to raise awareness on the importance of stakeholder engagement and highlighting the importance of involving civil society in sustainability planning and their relevance to the global environment.

100. In Asuncion and the AMA Municipal Development Councils, working groups will be organized to cover a number of themes dealing with project intervention sectors, e.g. sustainable transport with inclusive and gender equality approaches; solid waste management in homes and businesses (services and industries); empowerment and creation of spaces and recreational activities for women, children, youth and disabled persons within the green corridor and green areas, rehabilitation of water courses in the AMA, among others. The Councils, through these work groups will help generate during project implementation, inputs for a number of project interventions (e.g. development of LUP/SDPs, implementation of protected area management plans and green infrastructure, solid waste management

¹⁷ The ordinance proposal for creation of the IAPA states that the overarching goal of IAPA is to improve the quality of urban and metropolitan management specifically in terms of provision of infrastructure and services. Its functions are to: i) establish the reference framework for municipal reform; ii) coordinate municipal plans and projects in line with the municipal reform; iii) develop a strategic urban, metropolitan and regional vision; iv) formulate guidelines for urban and metropolitan development; v) identify institutional channels, regulatory instruments and Project level tools to improve management; vi) identify financing sources; vii) implement and manage municipal physical investment projects; viii) coordinate and harmonize institutional actions with diverse management levels within the Asuncion metropolitan region; ix) offer specialized services.

and transport oriented development) as well as for the sustainability of the AMA in general. The Councils will also provide inputs for the development of the citizen participation protocols. They will operate on the basis of annual work plans. Implementation of the work plans will be monitored and evaluated to provide feedback and improve its functioning as necessary.

101. *Platform of AMA Municipal Development Councils*: This platform will be led by the STP to promote inter-institutional and multi-stakeholder dialogue on Asuncion and AMA urban sustainability, which will feed into the development of a national strategy for urban sustainability. In PY1 the project will support the STP in designing the platform, including stakeholder mapping, structure, and terms of reference for its functioning, and will promote agreements between the different municipal councils involved to establish the platform and ensuring adequate representation of women, vulnerable groups and disabled persons.. The exchange of experiences under the above platform and AMA Municipal Development Councils will also provide feedback for dialogue processes on urban sustainability at national level.. A detailed action plan will be drafted identifying the specific technical assistance and processes to improve territorial articulation within the AMA region, using best practices –from ICES, ART and the GPSC- as a basis to replicate the project experiences to other municipalities (e.g. Luque, Lambare, Fernando de la Mora and San Lorenzo, which are the municipalities immediately surrounding Asuncion and are involved in the Metrobus project and/or limit with the green corridor) and to other cities throughout the country.

102. The project will also support the functioning of Asuncion Municipal Development Council and of the Platform of AMA Municipal Development Councils during the first three years of operation, the financing of which will then be provided by public and private funds. The project will also finance a financial sustainability study during the first year of their operation to identify these public and private funding sources.

103. Furthermore, to support citizenship building and participation the project will design and implement an awareness-raising program targeting the population of the AMA to stimulate civil society involvement in creating sustainability and resilience. This program will include themes such as: sustainable and resilient cities (building on the ESCI action plan); traffic regulations and measures, multi-modal transport and driving education; green infrastructure, biodiversity and ecosystem services; benefits of source separation of domestic wastes and payment of waste collection and disposal fees; climate change mitigation and adaptation; civil society participation and advocacy in public policies emphasizing in women, children, youth, disabled persons and vulnerable groups; civil society participation in monitoring of indicators related to urban development, sustainable city and efficient municipal government; among others to identified during design of the program. The municipal level platform above will follow the implementation of the awareness raising and provide inputs to improve the program as necessary.

104. The project will promote gender mainstreaming in the platforms and citizenship building actions through an approach to masculinities to reinforce equality. This innovative approach will be undertaken in collaboration with the municipalities through a stakeholder mapping and an assessment on the construction of masculinities in the AMA taking into account cultural and social aspects. Based on the results of the assessment, the project will propose targeted actions that the municipalities may develop through their social areas to contribute in working with men to promote a culture of equality and constructing positive messages that may be replicated e.g. in public transport and bus stop shelters (Outcome 2) and in the citizen participation protocols above.

105. *Output 1.6 Disaster risk management plan and early warning mechanism for the AMA*

106. The project will support the development of a DRR plan and early warning mechanism for recurrent flooding and its impacts in solid waste management, urban transport system, protected areas, health (dengue fever and other vector transmitted diseases) and water resources (drinking water and sanitation). The first approach to developing a DRR plan and early warning mechanism envisages capacity building for mainstreaming of DRR in the institutional processes of key stakeholders (SEN, Municipality of Asuncion and other municipalities, SEAM, STP, MOPC, Meteorological and Hydrological Directorate - DMH, and private sector), which will be undertaken between PY1-2. This will include a stakeholder mapping and the inter-institutional coordination mechanisms will be assessed identifying strengths, weaknesses, threats and opportunities for mainstreaming DRR. Secondly, capacity assessments of the above institutions will be undertaken to adjust existing DRR capacity building tools (e.g UNDP-DRR toolkit, UNDAC¹⁸ and OCHA¹⁹ tools); collect secondary information, review documents, realize interviews and focal groups. Based on the capacity assessments, targeted training suited to each institution will be undertaken, including basic DRR concepts; adjusting tools to the specific needs; training in the toolkit on shielding solutions for infrastructure works to build resilience against extreme events; and key aspects of DRR plans.

107. The second approach will be the development of the DRR plan for the AMA between PY1-2. Design of the DRR plan will include undertaking two assessments: i) one assessment of the current status of DRR within the AMA through identifying the main risk scenarios in the area, stakeholder mapping, coordination levels, main ongoing and planned initiatives, DRR tools and plans in the different sectors involved; and ii) another assessment of risks and to establish strategic guidelines for DRR in the AMA. This will include identifying the main threats, vulnerabilities, capacities and risk scenarios; and agreeing with the relevant stakeholders, including civil society, the risk reduction priorities for the different sectors, and the key challenges to reduce the loss of human lives and the social, environmental and economic impacts. These assessments will notably allow taking into account resilience and adaptation to climate change. Based on these results the DRR plan will be elaborated and will include an action plan for implementation. The action plan will contain a common vision agreed between the relevant stakeholders and will serve the purpose of mainstreaming DRR in planning and development (LUP/SDPs and other policy instruments). Design will include protocols for management of urban risks associated to specific threats in each municipality, particularly management of solid wastes in emergency situations (providing inputs for the implementation of the pilot projects under Outcome 3). The project will provide technical assistance to municipalities to mainstream DRR in their LUP/SDPs. To support this activity, exchanges of experiences and knowledge sharing will be promoted between the municipalities.

108. Within the framework of the DRR plan the project will provide support in PY3 to strengthen coordination between the SEN, DMH, municipalities, private sector and civil society for early warning. This will include identifying the existing early warning mechanisms that may exist within the AMA and coordination mechanisms to determine current gaps and capacities. Based on this assessment, an interinstitutional protocol for coordination and issuing of early warnings will be designed. This protocol will contain the roles and responsibilities of each stakeholder, information flows (within the institutions and between institutions) and decision making processes, as well as management of information on meteorological and hydrological forecasts to be monitored in emergencies. It will also include mechanisms for effective dissemination of messages and alerts to the population to ensure preparedness of the communities at risk and the population in general. Capacity building for implementation of the early warning protocol will be provided through targeted training; exchange of experiences with

¹⁸ United Nations Disaster Assessment and Coordination

¹⁹ Office for the Coordination of Humanitarian Affairs

successful early warning mechanisms in the region; procurement of equipment to strengthen the meteorological stations network in the AMA; and two simulations to validate the protocol.

109. Output 1.7: Monitoring and control system (MRV) for a sustainable city – Paraguay Sustainable Cities Platform

110. The project will develop a web-based monitoring platform to monitor sustainable city indicators building upon the experience of the Brazilian Sustainable Cities Platform²⁰. The STP, SEAM, MOPC, Municipality of Asuncion and the Paraguayan Sustainable Cities Network will jointly manage the platform. The first step to developing the platform will be establishing in PY1 the institutional and implementation arrangements, including the involvement of the above institutions, roles and responsibilities. This process will also identify other institutions that produce data, studies, best practices and other resources relevant to monitoring.

111. Secondly, the construction of a set of sustainable city indicators building on the ESCI indicators and other indicators specific to the AMA, as well as management efficiency indicators related to integrated urban planning, transparency and citizen participation. Indicators will include the relevant project level indicators related to sustainable transport, solid waste management and chemicals, biodiversity, and other related indicators of interest e.g. air quality and water, to aid in monitoring project performance and impact. This will include systematizing and streamlining indicators, preparing a reference document to define methodologies and protocols to monitor them, and identifying best practices at national and international level. The indicators will be broadly aligned with the SDGs. For this purpose, it is expected a dynamic participation of the project in the working meetings to be organized under the GPSC on indicators and geospatial tools at city level and examine their utility in assessing sustainability across cities. Monitoring will aid in determining baseline emissions, which is a requirement to access other financing sources. It will also help monitor emissions as part of the proposed transport NAMA (Output 1.2).

112. Staffs of the participating institutions will be trained to use the platform. Likewise, civil society and municipalities (including the platform of municipal development councils under Output 1.5) will receive training on goal-based planning taking into account the sustainable city and urban development indicators. A citizen perception survey will be undertaken in the AMA and the results disseminated to raise awareness. From PY2 onwards indicators will be monitored and the platform updated with the results of monitoring. Awareness raising and training will continue addressing dissemination of best practices and goal-based planning (for civil society and municipalities and including the dialogue platforms). Strategic partnerships will be sought with research and technological institutes, universities and others to improve monitoring performance and promote best practices. A financial strategy will be developed to ensure the sustainability of the platform and monitoring processes. In addition, between PY3-5 specific studies on solid waste management and chemicals, mobility and transport, biodiversity and other urban themes will be undertaken. The citizen perception survey will be repeated to assess how

²⁰ The concept of the platform is inspired in the Aalborg (Denmark) commitments signed by more than 650 municipalities, mainly European, covering: governance, urban management, natural common goods, responsible consumption, planning and design, mobility, health, sustainable local economy, social equity and justice, local to global. In Brazil the platform was implemented by the Red Nossa Sao Paulo and the Brazilian Sustainable Cities Network. In Paraguay, the Paraguayan Sustainable Cities Network has the know-how and permits to replicate the platform. It is conceived as a tool for: identifying challenges and responsibilities; developing sustainability policies; translating the vision of a sustainable future in concrete sustainable goals at local, regional and national levels; selecting priorities adjusted to local and regional realities; promoting participatory processes; strengthening transparency and accountability as well as formulation of sustainability goals.

awareness of citizens on sustainability issues evolves as a result of the continuous dissemination of monitoring results and the survey results disseminated to continue awareness-raising efforts.

113. To understand the impact of GHG emissions of the proposed interventions, a key aspect of the MRV system will be monitoring the number of vehicles in the main streets of the AMA; fuel consumption; type of vehicles (buses, cars, motorcycles) and their energy efficiency (derived from vehicle brand and age). The MRV system will also help establish an emissions baseline, which is a requirement to access other funding sources (eg. Green Climate Fund). As a parallel system an air quality monitoring protocol could be developed to help in establishing an air quality management plan. The protocol will identify key monitoring points and the parameters to be measured. As a pilot to complement the Metrobus monitoring equipment could be established in the main Metrobus trunk line and in the *Transchaco* Route, which joins the cities of Asuncion, Mariano Roque Alonso and Limpio for comparison purposes. Ideally the contaminants to be measured could be PM2.5, PM10, CO, O₃, NO_x, VOC, BC, and SO₂²¹.

114. Collaboration will be established with the GPSC, which may include providing access to information on different indicator sets potentially relevant to urban sustainability that will help them better articulate and achieve a long term objective of sustainability; training (under Output 1.3 above); support related to the Global Protocol for Community Scale Emissions, which cities are required to report on as part of the IAP; identify key components of geospatial data infrastructure development; among others that may be defined upon project implementation.

115. Outcome 2: Sustainable and safe mobility and transport in metropolitan Asunción for reducing GHG emissions from urban transport

116. Output 2.1: Multi-modal transport measures for the AMA in line with the Metrobus project

117. The Metrobus will connect three of the main municipalities of the AMA (Asuncion, Fernando de la Mora and San Lorenzo) providing a solution to the low quality of public transport and promoting less use of private transport means. The first phase of construction comprises 18 km of exclusive lanes and 16 feeder routes with 26 main weather and traffic-protected stations to be implemented by the MOPC between PY1 and PY4.

118. The project will support the MOPC in undertaking in PY1 the development of regulations for the Bicycle Lanes Law #5430/15, including a methodology and protocol for construction of bicycle lanes that will serve as input to the design of a bicycle lane pilot to be implemented in Output 2.1. During the construction phase, the project will pilot mainstreaming of multi-modal transport oriented development into the Metrobus. In PY1 the project will design a 100 km bicycle lane system, including transfer points in line with the Metrobus and the green corridor to be developed under Output 4.3 below, connecting key protected areas (RBSMBA and JBA) and Asuncion's historical center. Design will include a study based on the cultural constructions of men and women to identify the real possibilities of the bicycle lanes being used by women, on the basis of consumption patterns, clothing, opinion, and uses of bicycles, schedules and responsibilities, among others. This study will serve to tailor the design of lanes for a more or less equal use by men and women and generating opportunities to provide real benefits to women.

²¹ Particulate Matter 2.5; Particulate Matter 10; Carbon Monoxide (CO); Ozone O₃; Mono-nitrogen Oxides (NO_x); Volatile Organic Compounds (VOC); Black Carbon (BC); Sulphur Dioxide (SO₂).

119. A 30 km bicycle lane pilot will be implemented in PY2 taking advantage of the streets rehabilitated by the MOPC within the Metrobus (a total of 50 km will be rehabilitated). The pilot will include construction, horizontal and vertical signs. In addition, pilot bicycle transfer points will be constructed in 10 of the Metrobus stations along the main trunk line as well as other transfer points located in the feeder routes. The Municipality of Asuncion will provide the resources for maintenance of the pilot lanes and will continue the construction of the remaining lanes and their maintenance until PY5, thus completing the foreseen 100 km of dedicated bicycle lanes. Annex L includes a map with the preliminary identification of the bicycle lane system in connection with the green corridor through parks, plazas and protected areas.

120. *Output 2.2: Traffic measures to improve traffic management in the AMA*

121. Within the framework of the Transport Master Plan developed under Output 1.1 the project will implement several actions to improve traffic management. A first set of actions will pilot on the ground actions to demonstrate the measures included in the plan. The project will identify these pilot activities in PY1, which may include measures such as parking charges and restrictions, one-way streets, reversible lanes, traffic signs, and dedicated bus lanes in a major city street, among others, which will be implemented in PY2 and in PY4 by the Municipality of Asuncion and the MOPC. The project will identify lessons that will be systematized to provide feedback to improve the Transport Master Plan and for replication in other areas of the AMA by the relevant institutions.

122. The project will identify lessons that will be systematized to provide feedback to improve the Transport Master Plan and for replication in other areas of the AMA by the relevant institutions. Of key importance for the overall project implementation is the articulation between this Plan and the proposed LUP/SDPs to be developed under Outcome 1. The latter will, first of all, define current and future land use key parameters such as population density, urban and mobility design standards, health indexes and environmental regulations, among other factors. Once these inputs have been calibrated and validated by the national and municipal authorities, the Transport Master Plan will use this information as input to determine the transport requirements and link them for the appropriate design of public infrastructure, including passenger transport services and multi-modal transfer points, in order to convey an optimum and sustainable traffic management system for the AMA.

123. Between PY1 and PY2 the project will develop a web-based information platform to generate and manage traffic information that will help to establish traffic management strategies under the Transport Master Plan. The STP will lead the development of this platform with the participation of MOPC, the Metrobus Project Unit and the Municipality of Asuncion. It will aggregate information from existing systems such as the intelligent traffic lights system of Asuncion and the bus electronic ticketing system²², as well as information generated by the MRV system under Output 1.7 above, and including information on fuel consumption, number of buses in the public transport system, bus routes, average waiting time, air quality, number of traffic related accidents, frequent congestions, alternative routes, shorter and faster routes and traffic regulations, disaggregated sex data, gender related violence, among other parameters. The on-line platform's main objective will be to generate information to raise awareness of the citizens in regards to mobility in the AMA, and may eventually serve as an early warning system.

124. The targeted audience of this platform will be the general population of the AMA looking for traffic and transport information. During the project execution, the GEF funding will support the development and dissemination of the scope of the web-based platform, as well as training to the government officers responsible of their maintenance and update. Once the project is over the central and municipal

²² The electronic ticketing system will be implemented beginning in 2016 and is mandatory for all buses in the AMA (Decree 4043/15)

governments will carry out the actual maintenance and flow of information in a flexible and adaptive manner. The central government, through the Vice-Ministry of Transport will be able to upload and update information such as bus route information regarding schedules and fare prices. The Municipality of Asuncion will provide information on improved traffic regulations, highway and street constructions and detours, and bike routes. This platform will also have a forum/web-space for citizens to alert of traffic or transport complications occurring in real time, either for the government to take action or to help other citizens with urban mobility. The STP will serve as the natural nexus between the Central and the Municipal governments and will provide in-kind cofinancing through the project life to interact with the developers and operators of the website. With GEF support, the STP will understand during the life of the project the institutional requirements of maintaining and updating the infrastructure needed for the web-based platform to continue operating after the end of the project.

125. To provide inputs to the Transport Master Plan and the information platform, the project will implement with MOPC a pilot monitoring plan on fuel consumption and emissions of GHG and particulate materials by buses within the AMA. Monitoring will be undertaken between PY1 and PY2 with the voluntary participation of bus companies, through Portable Emissions Measurement System (PEMS) devices that will be temporarily installed in buses. Information gathered from the monitoring campaign will serve to raise awareness of public transport drivers and entrepreneurs on energy efficiency on the assumption that if buses only stop at the designated bus stops²³ they will consume less fuel, save money and reduce emissions.

126. *Output 2.3 Optimum bus routing and bus stop shelters to complement the Metrobus*

127. The Metrobus project will affect 84 public transport routes, which will be restructured through new routes. Based on the current availability of routes and the results on transport demand obtained through the mobility and connectivity survey undertaken in Output 1.4 above, the project will work with the MOPC and the Metrobus Project Unit between PY3 and PY4 to identify the best routes and implement a pilot of 30 new routes. MOPC will coordinate with the bus companies affected by the retracing of routes to engage them, ensure buy-in, and eventually the signing of contracts through with the companies will adopt the new routes.

128. Currently there exists an overcrowding of public buses in several city streets while others do not have enough frequency at certain hours. This is due to the lack of any public transport route planning. For instance, in the main artery of the City of Asuncion, there are more than 50 different privately-owned bus companies providing public transportation that have their own schedule and at certain times with low demand, they all travel the same route, creating a chaotic traffic system aggravated by the mobilization of private vehicles. In order to determine the “best routes”, the project will support an optimization model considering the constraints and a set of objectives to maximize or minimize. The constraints could be limiting the number of buses in certain city streets to rationalize the existing demand during certain periods of the day, another would be to supply more low-emission buses to serve the entire city, and another could be reducing the amount of kilometers traveled and emissions. The initial traffic and transport survey (Output 1.4), as well as the pilot with 30 routes will serve to gather new data on real conditions to optimize the bus routing and bus stop shelters model.

129. Furthermore, the project will design and implement the pilot construction of eco-sustainable shelters in bus stops along the Metrobus feeders (Fernando de la Mora Ave.) with the purpose of strengthening the bus stops currently under construction by the MOPC/VMT, which consist only in bus stop signs and

²³ The MOPC is constructing 209 bus stops in the AMA. Stopping in the designated stops is mandatory beginning in 2016 as per MOPC/VMT Resolution 81/16

paintings on the streets. Design will be undertaken in PY1 and will include elements such as an independent electricity system for illumination (photovoltaic cells), weather protection (sun and rain), waiting area, colored trash bins to encourage separate disposal of wastes (in line with Outputs 3.2 and 3.3), and low maintenance considerations. The shelters, as they provide a protected space and light, will help reduce gender-based violence in bus stops, and their design will take into account including specific aspects to strengthen the prevention of violence, especially against women. Thirty shelters will be constructed between PY2 and PY3 to demonstrate the design, and based on the experience a manual for construction of eco-sustainable shelters will be prepared and disseminated. Based on this experience the MOPC will replicate the shelter design in other points of the city.

130. *Output 2.4 Standards for public transport vehicles' emissions, maintenance and scrapping*

131. Based on information generated by the MRV system (Output 1.7) and web-based traffic information platform (Output 2.2) the project will work with the SEAM to develop between PY1 and PY2 a set of standards for vehicle emissions and maintenance, a maintenance guide for motorized vehicles and an emissions certification protocol for public transport buses in the AMA. These will provide inputs to elaborate an Air Quality Management Plan to be prepared with SEAM and finalized during PY2.

132. The standards and the maintenance guide above will serve to develop a program for removal and scrapping of old buses to optimize the MOPC's Bus Fleet Renovation Plan and the Metrobus project. The former considers removing and scrapping buses older than 10 years, while the latter will displace buses that currently circulate on the Metrobus main trunk line; some of these buses may be relocated in the feeders but others may be scrapped. The program will be elaborated involving the SEAM, MOPC and the Municipality of Asuncion and implemented between PY2 and PY4. It will serve the purpose of determining the scrapping costs and the value of the vehicle to be scrapped, secure scrapping processes as well as the local and global environmental benefits of its removal.

133. Outcome 3: Improved chemicals and waste management system for reducing emissions of UPOPs, GHGs and toxic chemicals

134. *Output 3.1 Pilot project on adequate management of illegal dumpsites in the RBSMBA to reduce global impacts*

135. This pilot will demonstrate the feasibility of an environmentally adequate and socially improved management of the RBSMBA, reducing the release of UPOPs in a critical point of the AMA. The pilot will rehabilitate and conserve an area of 30 hectares through removal of accumulated wastes and establishing a monitoring and surveillance scheme. The project will develop in PY1 a Plan for Rescue, Rehabilitation and Care of the RBSMBA. This plan will be prepared involving the SEAM and the Municipality of Asuncion as co-managers of the reserve. It will include the identification and characterization in terms of quantity and composition of the wastes accumulated in the reserve, which mainly are considered to be municipal waste but may also contain hazardous waste, as well as the costs and feasibility of cleanup to support the rehabilitation of biodiversity habitats under Output 4.1 below. The plan will include the incorporation by SEAM-Municipality of Asuncion of informal waste pickers (possibly female *gancheras* displaced from the Cateura dumpsite as part of the closure process or else *gancheras* that already work at the site) as a permanent brigade responsible for cleanup of critical or representative areas of the reserve as well as for monitoring and surveillance to prevent the future dumping of MSW, activities to be carried until PY5. A guide on best cleaning practices will be prepared to help train and provide guidance to the workers, as well as for replicating the experience in other areas of the AMA where illegal dumpsites are located. The plan will be incorporated into the RBSMBA's Management Plan to be finalized with project support and will be implemented under the overall

responsibility of the reserve's Management Committee to be established by SEAM-Municipality of Asuncion (Output 4.1 below). Annex K includes additional information on the pilot.

136. *Output 3.2 Pilot project on collection-separation of MSWs (10 ton/day) to recover value contained in wastes*

137. This pilot will demonstrate the feasibility of implementing separation and preparation for recycling of MSWs under more adequate environmental and economically feasible conditions. It will be implemented in a community that is socio-economically representative of the AMA covering some 10,000 people (approximately 10 ton/day) and will seek to generate experiences and lessons for the productive chain involved in waste management, including designing operations with BAT/BEP, strengthening service providers and markets for recyclable products, and improving the services provided to the population of the AMA.

138. In PY2 the project will work with the SEAM to develop a web based system for exchange of materials recovered during the separation activities, which will comprise providing information on-line about the composition and amounts of available waste materials with economic value, such as cardboard and paper, plastic, metals, tires and e-waste, directly to the recyclers or final users and to potential generators as well. This will support the improvement of markets thorough elimination of small and large "intermediaries", which normally take most of the value of recovered materials and products derived from wastes. The system will be established in a web page and server of the SEAM and will be managed by the organization that will implement the separation pilot project, and later on extended to other similar associations or enterprises that may be created for separation and recycling of products, which do not exist presently but which establishment this activity will also promote through dissemination of successful results. Development of the system will include training for its operators as well as for collectors and recyclers.

139. During PY2 the project will work with SEAM and the Municipality of Asuncion to identify the most suitable location for the pilot, based on the following criteria: i) Possible location in the Cateura dumpsite (less impacts and risks); ii) At one of the locations identified by the MSW Management Master Plan for the transfer and separation facilities identified under the selected alternative #4; iii) At a location close to the area where the MSW are generated, that is not of a high socioeconomic level to avoid resistance; iv) Near the green corridor to be established under Output 4.3 below to make use of organic matter to produce compost and if possible near a bicycle lane to promote a synergy with collection; v) In an industrial area.

140. Design of the pilot will include: i) the elaboration of a business plan; ii) consultations and agreements with the community where the pilot will be implemented and informal waste pickers to raise awareness on the pilot's concept and benefits and to ensure their buy-in and engagement; iii) legal, institutional and implementation arrangements for implementing and operating the pilot, and iv) design of the facilities and technical specifications of the equipment to be procured. Main equipment consists on bin for materials, transporting bands, packing machine and a collection truck, in a facility with roof and cement floor. The pilot will be operated following annual work plans. It will incorporate 10 workers, who may be a combination of *Gancheros* from Cateura and *carriteros* (informal waste pickers that have motocars and drive around the city picking recyclable materials), as permanent staff of the separation facilities, with an expected ratio of at least 50% - but preferably 80% women. Gender issues will be mainstreamed through: i) facilitating access to children to educational or care-taking centers while the mothers are working; ii) training with the participation of spouses on masculinities, sexual and

reproductive rights and economic empowerment; and iii) advice on access to municipal and national social programs.

141. An information dissemination campaign for reduction at source and separation (e.g. printed materials, radio programs) targeting households, neighbors' associations, schools, businesses and industries located in the pilot site will be undertaken to raise awareness of the community and involve them in the implementation of the pilot. Initially, selective collection will be carried out 3 days/week at homes alternating with 3 days/week at schools, businesses and institutions. Two best practice guides to separation will be prepared, one for households and workers, and another for a training-for-trainers course. Annex K includes additional information on the pilot.

142. *Output 3.3 Pilot project on recycling (6 ton/day) to recover value contained in the MSWs*

143. This pilot will demonstrate the feasibility of recycling MSWs (6 ton/day at the end of the project) of selected wastes (e.g. plastics, electronics, cardboard and paper) separated under the separation pilot above, following BEP/BAT and benefiting the productive waste management chain and improving the services provided to the population of the AMA. In PY1 the project will be supported by a cost-benefit analysis of the recovery, recycling and value adding activities and six (6) business plans to determine the most feasible operations: two (2) for separation; one (1) for plastic; two (2) for electronics; and one (1) for cardboard and paper. The cost-benefit analysis and business plans will contain the basic elements to develop small-scale facilities.

144. In PY2 and PY3 the project will strengthen the technical and management capacities of service providers (such as small scale collectors/separators and recyclers), and CSOs involved in waste management through training and outreach to enable them assimilating technologies and waste management processes (e.g. improved ways to classify, screening techniques, separation by density differences, among others,) for adding value to wastes. Capacity building will be undertaken under a labor insertion approach to provide employment opportunities to *gancheros* and *carriteros*. These workers will be able to either establish their own facility (as a cooperative) to separate and/or recycle or to work in an already established recycling facility.

145. The project will work with the Municipality of Asuncion to design the recycling facilities in PY3. The location of the facilities will be determined based on the following criteria: i) Location near the collection-separation pilot; ii) one of the two sites identified by the MSW master plan for transfer and separation stations under the alternative 4 selected; iii) an industrial area; iv) Near a bicycle lane to take advantage of "clean" wastes with recycling potential, e.g. batteries, bottles, paper, small electronics.

146. Design of the pilot will include: i) consultations and agreements with the community and informal waste pickers to raise awareness on the pilot's concept and benefits and to ensure their buy-in and engagement; ii) legal, institutional and implementation arrangements for implementing and operating the pilot, and iii) design of the facilities and technical specifications of the equipment to be procured. Equipment will depend on the material to be processed, but will include a roofed area with cement floor, bins for materials, a screening system, transporting band, cutting tools and a packing machine.

147. The pilot will be operated following annual work plans. It will incorporate 10 informal waste pickers (including *gancheros* and *carriteros*) as permanent staff of the separation facilities, with at least 50% women in them, who will be trained on the recycling process, health, security and operation scheme. Gender mainstreaming strategies mentioned in par.133 above will also be incorporated in this pilot.

148. The facilities will initially operate processing the products obtained within the separation pilot (Output 3.2 above) and may eventually incorporate other materials. A best practice guide to recycling will be elaborated for the workers, which will be useful for replication purposes. An information dissemination campaign to promote recycling (e.g. printed materials, radio programs) targeting households, neighbors' associations, schools, businesses and industries located in the pilot site will be undertaken to raise awareness of the community and involve them in the implementation of the pilot. Annex K includes additional information on the pilot.

Outcome 4: Emplacing and improving Protected Area and Urban Green Infrastructure management

149. *Output 4.1: Banco San Miguel and Bahia de Asuncion Ecological Reserve (RBSMBA) management plan approved and under initial implementation*

150. The RBSMBA is a protected area under the National Protected Area System (SINASIP) co-managed by the SEAM and the Municipality of Asuncion²⁴. The reserve comprises two zones: Banco San Miguel owned by the Municipality, and Bahia de Asuncion, owned by the SEAM (see further details on the reserve in Annex I). The SEAM, the Municipality of Asuncion, MOPC and the NGO Guyra Paraguay have initiated the process of elaborating the RBSMBA's management plan through meetings and identifying programs and projects for the protection and management of the reserve. In PY1 the project will support these stakeholders in finalizing the management plan²⁵ and streamlining it with current national priorities (e.g. National Development Plan 2030). The completed baseline GEF/METT tool will provide further inputs to the development of programs and projects. Special attention will be given to developing the institutional arrangements for an effective co-management scheme for the reserve, which currently does not exist. Three (3) consultations will be undertaken with the participation of public, private, civil society and local (e.g. artisan fishers) stakeholders. The SEAM will approve the final draft of the management plan as the national protected area authority.

151. The SEAM and the Municipality of Asuncion will establish the RBSMBA Management Committee²⁶. Members will include the SEAM, Municipality of Asuncion, MOPC, STP, SEN and the National Tourism Secretariat (SNT). The project will support inter-institutional dialogue and meetings leading to the establishment of the committee, and once established, will provide technical assistance in developing an organization manual, terms of reference for its functioning, and training for elaboration of the committee's first annual work plan. The Management Committee will meet periodically to approve the reserve's annual work plans, supervise the implementation of the reserve's management plan and undertake the necessary activities to fulfill its responsibilities. SEAM and the Municipality of Asuncion will provide the necessary infrastructure for functioning of the committee²⁷. Furthermore, the project will technically assist the Management Committee in developing a financial plan, including the potential financing sources. Coordination with current initiatives in the area of influence of the bay will be sought

²⁴ The reserve was established through Law #2715/2005

²⁵ Development of the management plan will follow the "Methodology for development of SINASIP protected area management plans" (Resolution DPNVS #49/2000)

²⁶ The objectives and responsibilities of protected area management committees are laid down in the SEAM Resolution #194/04. Objectives are: i) collaborate and support protected area (PA) management; ii) promote stakeholder coordination for managing and strengthening the PA; iii) provide responses and opinions on matters related to the PA; iv) propose and facilitate development of regulations; v) support dissemination of information for PA conservation; vi) support management efforts for conservation, participatory processes, conflict resolution and synergies.

²⁷ The Paraguayan Navy has a building within the RBSMBA, the use of which could be explored by the SEAM and Municipality as part of infrastructure development for managing the reserve.

in the process, considering the potential funding that these initiatives may provide to implementation of the reserve's management plan. The financial plan will include a bird watching business plan.

152. SEAM and the Municipality of Asuncion will hire 15 park rangers. The project will provide support in drafting job descriptions (taking into account gender equality and social inclusion considerations e.g. prioritizing employment of youths in poverty situation who live in the areas surrounding the reserve). Once the park rangers are hired, the project will provide from PY2 onward, annual trainings in natural resources monitoring with special attention to migratory birds and invasive plant species; environmental interpretation; and surveillance. These park rangers will work in close coordination with the waste cleanup and monitoring brigade to be hired under Output 3.1 above.

153. The project will assist the Management Committee in developing an Environmental Interpretation Plan (PY2) to help visitors understand the reserve and its significance as a key urban area of importance for biodiversity and provider of ecosystem services to Asuncion and its population; seeking to help them form a positive, sustainable relationship with the environment. The plan will identify the necessary infrastructure and equipment to ensure institutional presence and promote environmental education, taking into account key objectives of the reserve: attention to visitors, monitoring of critical areas for migratory birds and local livelihoods (artisan fisheries). Within the framework of the plan, the project will support in PY2 the design of infrastructure (e.g. signs, observation towers, service areas, spaces for visitor attention and interpretation), which will be constructed from PY3 onward by MOPC.

154. Habitat restoration will be a key activity to be undertaken within the framework of the reserve's management plan. The RBSMBA comprises savannas and inner wetlands. Significant areas of wetlands were modified due to extraction of sand and hydraulic filling for construction of the *Costanera* waterfront; while part of the savanna was invaded by *yuqueri* (*Mimosa pigra*) as a result of flooding in recent years. Alterations have also occurred due to the presence of domestic animals belonging to the surrounding communities. The project will undertake a rapid ecological evaluation to assess conservation status, pressures and sources to help identify the critical zones for intervention. Two types of restoration activities will be undertaken (PY2-4). The first one will comprise the cleanup of 20 hectares invaded by *yuqueri* along the borders of bird habitats. Removal of *yuqueri* will be undertaken in dry seasons (around 5 months/year). The second one will involve rehabilitating an additional area of 20 hectares of beach areas through small dams constructed with sand bags to avoid soil loss and manage water levels to recreate roosting and nesting habitats²⁸. Rehabilitation of these 40 hectares will help maintain the flooding cycle and soil moisture between May and July, and a minimum water level between August and November, recreating the natural habitats previous to the dredging, thus benefiting migratory species and particularly five (5) flagship species: Buff-breasted Sandpiper; American Golden Plover; Lesser Yellowlegs; White-rumped Sandpiper; and Pectoral Sandpiper.

155. In support of habitat restoration and to help develop environmental awareness, build citizenship and involve civil society in conservation and sustainable use of the reserve, the project will support annual cleanup campaigns. SEAM, the Municipality and Guyra Paraguay organize two annual waste cleanup campaigns of the bay with the participation of some 800 voluntaries from CSOs, school students and individuals who join the activity. With project support, two additional campaigns will be undertaken every year, seeking to involve a greater number of people and covering a larger area of the bay. The project will help raising awareness to promote involvement, providing inputs, and preparing information materials. This activity will coordinate with Output 3.1 and will be jointly undertaken in the field by park

²⁸ The activity will build upon a first experience undertaken with the support of the US Fish and Wildlife Service, which restored 25 hectares in three years (2012-2015) for the Bearded Tachuri (*Polystictus pectoralis*) and the Buff-breasted Sandpiper (*Tryngites subruficollis*). The Project will assess the effectiveness of the dams implemented under this initiative and make adjustments, if necessary, to extend the surface areas to another 20 hectares.

rangers and the permanent cleanup brigade, who will organize the activity in the field and lead the voluntaries in cleanup.

156. Gender mainstreaming will be ensured through facilitating access of women to green areas of the corridor through a more efficient public transport system (Outcome 2); ensuring safety through lighting, access and surveillance; employment generation (e.g. at least 50% of park rangers will be women, training for women to work as guides in bird watching initiatives); mainstreaming of gender considerations in the management plan, the environmental interpretation plan and in the design of infrastructure.

157. Output 4.2 Jardin Botanico de Asuncion (JBA) and Parque Guasu Metropolitano (PQM) management plans for conservation and sustainable use of key ecosystems

158. The JBA is a municipal-owned protected area of 110 hectares; it is a key recreational area of the population of Asuncion, and is the second most important area for birds, with 161 species (see more detailed information in Annex I). In PY2 the project will provide technical assistance to the Municipality of Asuncion in updating the JBA management plan seeking to mainstream new management models, including visual interpretation systems, zoning based on the quality of the existing natural resources, impacts and prevention and maintenance of the carrying capacity. Updating of the management plan will be undertaken through a participatory process, involving consultation and validation processes and incorporating civil society. The process will include developing a financial sustainability plan to optimize revenues and funding allocated by the municipal budget, as well as to identify other potential funding sources for implementation of the management plan. The management plan and its financial plan will be approved by the Municipality of Asuncion and homologated by the SEAM as the national environmental authority. It will be implemented by the Municipality from PY3 onward. The management plan will include strengthening the tree nursery of the JBA to provide tree seedlings for planting within the green corridor to be established under Output 4.3 below.

159. The PQM is owned and managed by the MOPC; it has 131 hectares and forms part of a larger complex of properties occupying 1,062 hectares that conserve remnants of grasslands in an urban area (see more detailed information in Annex I). The project will technically support the MOPC in PY2 in developing a management plan and financial plan for the area. As above, the process will seek to mainstream new management models, including visual interpretation systems, zoning based on the quality of the existing natural resources, impacts and prevention and maintenance of the carrying capacity. A rapid ecological evaluation will be undertaken to identify an adequate zoning of the area for recovery and conservation of habitats for grassland bird species. Development of the management plan will be undertaken through a participatory process, involving consultation and validation processes and incorporating civil society. The SEAM will approve the management plan. As above, the management plan will include the strengthening of the tree nursery to provide tree seedlings for planting within the green corridor.

160. Project support to the MOPC will also include developing an information center in the *Parque Guasu* with its corresponding business plan. The information center will act as the main hub for the project's awareness raising programs on the sustainable urban city. It will comprise a 500-m² building and recreational areas in the park with numerous concessions that would feed into the business plan. Design of the information center will be undertaken in PY2. It will incorporate gender and social inclusion considerations and will take into account green building technologies such as green roofs, use of solar energy, and low maintenance considerations; and the use of electric equipment/vehicles with their plug-in

facilities for cleaning of paths and trails. MOPC will be in charge of construction and implementation from PY3 onwards.

161. This output will mainstream gender equality through facilitating access of women to green areas of the corridor through a more efficient public transport system (Outcome 2); ensuring safety through lighting, access and surveillance; employment generation (e.g. at least 50% of staffs will be women, identification of business opportunities for women in the business and financial plans); mainstreaming gender considerations in the management plans and in the design of infrastructure in PQM; identifying specific activities for children and opportunities for mothers to take their children during weekends in both JBM and PQM.

162. Output 4.3: Asuncion Green Corridor established for conservation of urban biodiversity and ecosystem services

163. The city of Asuncion has a total of 5,994 hectares of green areas, comprising 3,009 hectares of public green areas and 2,985 hectares of private green areas (patios, backyards, empty lots located in built-up areas). The project will support the Municipality of Asuncion and the SEAM in establishing the Asuncion Green Corridor. This green corridor will thus ensure connectivity between the network of public and private green areas providing the unique opportunity of developing a model for urban biodiversity conservation with clear benefits for the city, including reduction of air pollution, increased resilience, connectivity, health, and public recreation, as well as ensuring maintenance of carbon stocks. In addition, it will provide the framework for implementing the urban PES schemes to be developed under Output 1.2 above, to help diversify and increase the resources to maintain and manage the corridor.

164. The green corridor will cover a total surface area of 5,793 hectares comprising a network of 40 publicly owned core areas (protected areas, natural reserves and plazas over 0.5 hectares), which amount to 3,009 hectares, two riverside linear parks to be established by the MOPC (23 hectares) and a surrounding area designated as Development and Management Zone (equivalent to a buffer zone) of 2,761 hectares (see Annex I for the list of 40 core green areas and map). The Development and Management Zone includes green areas in the built-up areas (patios, backyards, empty lots, street trees, small sized plazas, with less than 0.5 hectares)²⁹.

165. Of key importance for the overall project implementation will be the articulation between the Green Corridor Action Plan and the proposed LUP/SDPs to be developed under Outcome 1. The latter will, first of all, define current and future land use key parameters such as population density, urban and mobility design standards, health indexes, green infrastructure and environmental regulations, among other factors. The Green Corridor Action Plan will use this information as input to determine the future management and development of green infrastructure within the corridor and to expand the corridor to include other green areas within the AMA, in order to convey an optimum and sustainable network of green areas to preserve and enhance urban biodiversity.

166. The project will technically support the Municipality of Asuncion and the SEAM in elaborating the technical assessments necessary for official recognition of the corridor, and in undertaking the recognition

²⁹ The Development and Management Zone covers 200 mts (2 blocks) around each core area. In certain areas (e.g. wetlands, Paraguay River and islands) the buffer zone has a greater area to ensure connectivity. Asuncion's historical center (300 hectares) has also been included within the buffer zone.

procedures. The SEAM will officially recognize the corridor through a resolution, while the Municipality will do so through an ordinance issued by the Municipal Council. Furthermore, it will support both institutions and the MOPC to develop and agree a co-management scheme of the corridor. Under Output 1.1 above the project will support the development of the Asuncion Green Corridor Action Plan taking into account land use guidelines and incorporating an ecosystem approach to managing the corridor and mainstreaming the plan into the AMA land use and sustainable development plans. The co-management scheme will be incorporated into this action plan. The corridor's action plan will explore the synergies with the Transport Master Plan including physical structures and routes to best connect the core areas of the corridor, and with the Solid Waste Management Plan. Furthermore, as part of the action plan, a management effectiveness tool with targets will be developed to measure management effectiveness of the green corridor. The tool will be completed at mid-term and end of project as part of the project's M&E (Outcome 5).

167. The project will also develop guidelines determining appropriate mixes of native species for planting and taking into account the influences of the four ecoregions that converge in Asuncion and its metropolitan area. MOPC will adopt these guidelines in developing its planned riverside linear parks. Furthermore, these guidelines will be set in specific regulations (e.g. for environmental impact assessments) to ensure that through them the public and private stakeholders that may incorporate urban forestation/reforestation initiatives in their programs and projects take into account biodiversity and ecosystem services considerations. With the Municipality, the project will explore the possibilities of providing incentives for private owners within the corridor (e.g. tax discounts) to incentivize tree planting and care.

168. Moreover, the project will prepare information and educational materials (e.g. environmental manuals; guides; booklets) targeting different audiences such as authorities, public institutions, neighborhood committees, NGOs, and the population in general. Within the awareness programs launched from the *Parque Guasu* information center, the corridor-related awareness raising activities will help these audiences get to know the corridor and its environmental and social benefits, encourage them to make the best use of the corridor sustainably, and get involved in conservation of biodiversity not only within the corridor but in their own neighborhoods through caring for the environment (e.g. planting trees in gardens, streets and plazas following the guidelines above; caring for gardens; managing domestic solid wastes and others). The tree nurseries of the JBA and PQM will play an important role in awareness raising through the distribution of tree seedlings. They will provide tree seedlings that the municipal services will plant in public parks and plazas and along the bicycle lanes as well as to individuals, neighborhood committees or volunteer groups who may wish to plant them in their yards, sidewalks or neighborhood plazas. As part of the awareness raising, signs will be designed and placed in strategic locations (coordinated with pilot interventions under Outcomes 2 and 3, e.g. Metrobus, bicycle lanes and solid waste pilots) to provide key information on the corridor. A key environmental and cultural awareness raising activity will involve replicating the Concert "Birds in Paraguayan Music" in the RBSMBA, JBA and PQM, three concerts per year, one in each protected area³⁰.

169. Training will be undertaken annually targeting park rangers of the RBSMBA, JBA and PQM and technicians of the SEAM, MOPC, Municipality of Asuncion and other metropolitan municipalities to build their capacities for managing the corridor under a connectivity and ecosystem approach. Sixty (60) staffs will be trained in themes such as: ecosystem approach; management of urban natural reserves and parks; green infrastructure; business plans and green entrepreneurship; nature tourism; risk reduction and

³⁰ The concert was successfully implemented in 2014 and 2015 by Guyra Paraguay and the Municipality of Asuncion in different locations of the City. The concert is performed by the Chamber Orchestra Philomusica de Asuncion playing Paraguayan Music inspired in bird songs.

management; basic waste management/recycling; climate change; natural and cultural heritage of Asuncion.

170. Annual bird census and surveys will be carried out between PY1-5, building on the annual census implemented by the SEAM and Guyra Paraguay in the Asuncion Bay and expanding to other areas within the corridor e.g. JBA, PQM, *Cerro Lambare* and wetlands along the Paraguay River. These census and surveys will help measure the quality of the ecosystems and habitats as well as status of local and migratory species. This activity will contribute to global census and surveys of migratory and threatened species. The project will prepare and publish a field guide to the birds of Asuncion as a contribution to generating scientific information and increasing knowledge of the natural heritage protected by the corridor.

171. Gender mainstreaming will be ensured through: i) communication and awareness raising campaigns linking environmental conservation issues with traditional knowledge (e.g. use of plants with medicinal purposes) through information materials, seminars and exhibitions in public spaces within the green corridor; and iii) generation of micro-enterprises for employment generation (e.g. urban tree nurseries managed by women with species adequate for the corridor, tour guides).

Outcome 5: Dissemination of lessons-learned, monitoring & evaluation

172. Output 5.1: Project M&E system operational and generating periodic reports

173. The Project Management Unit (PMU, see section VIII below on governance and management arrangements for detailed information) will design the project's M&E system and will be responsible for implementing the project's M&E plan, including the project's inception workshop, annual planning workshops, monitoring of activities, outputs and outcomes, monitoring of the risk matrix and identifying potential risks and mitigation measures to reduce those unexpected risks (see section VII for further details). The Project Coordinator will prepare six-monthly Project Progress Reports (PPR) and will provide inputs to the UNDP-CO for preparing the annual Project Implementation Report (PIR). These reports will include the project results framework with outcome indicators, baseline and six-monthly target indicators, monitoring of the risk matrix, and identifying potential risks and mitigation measures to reduce those unexpected risks. M&E will also include completion of the GEF Tracking Tools, the GEF Management Effectiveness Tracking Tools for protected areas, the UNDP Capacity Scorecard, the Sustainable City Capacity Scorecard (to be developed under Outcome 1) and the Management Effectiveness Tool for the Green Corridor (to be developed Outcome 4) at mid-term and end of project.

174. Output 5.2: Mid-term review and final evaluation

175. The mid-term evaluation will be carried out 2.5 years after project start-up, at the latest, and will assess the progress of each project activity and attainment of the project's indicators presented in the Project Results Framework (Section V) and Multiannual workplan (Annex A). This evaluation will also assess the disbursement of financial resources and co-financing provided by project partners, as well as monitor and assess administrative aspects as agreed upon between UNDP and SEAM, Municipality of Asuncion and MOPC for the execution of the project. The Mid-Term Evaluation/Review (MTR) will also inform the adaptive management of the project and improve its implementation for the remainder of the project's duration.

176. The Terminal Evaluation (TE) aims to evaluate whether all planned project activities have been developed, resources granted by the GEF have been disbursed and spent in line with GEF and UNDP

policies and rules, and in accordance with the activities as set-out in this project document. The Terminal Evaluation will also extract and identify lessons-learned, how to disseminate them most efficiently and make recommendations to ensure that project results become sustainable.

177. Output 5.3: Knowledge products, best practices and lessons learned published and disseminated

178. Between PY2-4 the project will publish eight (8) urban sustainability booklets systematizing project experiences, best practices and lessons learned, both, printed and on-line. These booklets will approach different themes covering urban sustainability. Specific themes will be selected during project implementation, but may cover aspects such as: human development in the urban context; transport-oriented development; green corridors for urban sustainability and resilience; civil society and private sector participation for urban sustainability; solid waste management study cases; gender equity and urban sustainability, among others.

179. Publications will include information on the methodology applied in each of the demonstration project, the difficulties encountered, as well as the projects’ successes and their compliance with the project’s objectives. Publications will be shared with project partners and will be made available to other cities participating in the Sustainable Cities IAP through the knowledge management and information exchange mechanisms foreseen under the GPSC.

ii. Partnerships:

180. The implementation of this project requires the active participation of several partners, government partners as well as civil society and private sector partners. Responsibilities of these partners in the project’s implementation as well as initiatives supported by these partners in addressing the project’s development challenge have been summarized in the Tables 1, 2 and 3 below.

Table 1. Partnerships with government partners (see Figure 2 Project Organization Structure, Section VIII below for further details on the Project Board and Project Technical Committee mentioned in the tables below)

Partner	Responsibilities of the partner in the project’s implementation and other initiatives this partner is implementing that contribute towards the achievement of this project.
Environment Secretariat (SEAM)	<p>Responsibility in the project: Lead Development Partner. National environmental authority. Co-financier. Project Board member. Will coordinate with the Municipality of Asuncion and AMA municipalities, STP, MOPC and key relevant stakeholders in project planning, implementation and monitoring. Will participate in development of municipal land use plans providing overall guidance; PES mechanisms for urban ecosystem services; training plans and environmental awareness raising; dialogue platforms; mainstreaming of DRR; environmental indicators for sustainable city and implementation of monitoring and MRV (Outcome 1); development of standards for vehicle emissions, maintenance and scrapping in close coordination of MOPC; and air quality management plan (Outcome 2); development of RBSMBA waste cleanup plan; design of pilot interventions in collection, separation and recycling (Outcome 3); development and approval of RBSMBA management plan; establishment of its management committee; design and implementation of activities in the RBSMBA; official recognition of the Asuncion Green Corridor; development of guidelines for managing the green corridor; supporting implementation of green corridor in aspects related to SEAM’s mandate (Outcome 4).</p> <p>Other ongoing initiatives/baseline projects, which contribute towards project’s results: Responsible for the environmental and climate change policies. In charge of</p>

Partner	Responsibilities of the partner in the project's implementation and other initiatives this partner is implementing that contribute towards the achievement of this project.
	the municipal solid waste management master plan. Co-manages the RBSMBA. Implements land use and biodiversity conservation programs. Partner in cleanup campaigns of the Asuncion Bay. It is also developing the Environmental Information System, PES mechanisms and environmental monitoring schemes (e.g. solid wastes, chemicals and air quality).
Municipality of Asuncion	<p>Responsibility in the project: Development Partner. Co-financier. Member of the Project Board and of the Project Technical Committee. Will coordinate with the SEAM, STP, MOPC, SEN, other AMA municipalities and key relevant stakeholders in project planning, implementation and monitoring. Will participate in developing and implementing the Asuncion and AMA land use plans and sustainable development plans; municipal financial strategies; training programs and citizenship building; strengthening of IAPA; dialogue platforms through Asuncion's Municipal Development Council to be lodged within IAPA; strengthening of DRR at municipal level and developing DRR plan/early warning; development of sustainable city indicators and monitoring/MRV (Outcome 1); implementation of bicycle lane system and traffic management measures in Asuncion (Outcome 2); design and implementation of waste management pilots – RBSMBA cleanup plan, collection, separation and recycling (Outcome 3); developing RBSMBA and JBA management plans; will integrate the RBSMBA management committee; official recognition of the Asuncion Green Corridor; development of guidelines for managing the green corridor; supporting implementation of green corridor (Outcome 4).</p> <p>The Asuncion Municipal Development Council will appoint a representative to the Project Board.</p> <p>Other ongoing initiatives/baseline projects, which contribute towards project's results: Provides public services, including managing collection services and controlling final disposal of municipal solid waste; municipal traffic lights system; maintenance of green areas; and developing bicycle lanes. Co-manages the RBSMBA. Partner in cleanup campaigns of the Asuncion bay.</p>
Ministry of Public Works (MOPC)	<p>Responsibility in the project: Development Partner. Co-financier. Member of the Project Board and of the Project Technical Committee. Will coordinate with the SEAM, STP, MOPC, SEN, other AMA municipalities and key relevant stakeholders in project planning, implementation and monitoring. Will participate in developing and implementing municipal land use plans and sustainable development plans; training programs; dialogue platforms; mainstreaming DRR in transport sector; development of sustainable city indicators and monitoring/MRV (Outcome 1). Lead agency for Outcome 2. Will participate in planning, implementation and monitoring of component activities; coordinate with the Municipality of Asuncion for implementation of bicycle lane system and traffic management measures; with the STP for generating a traffic information platform; with the SEAM for developing standards for vehicle emissions, maintenance and scrapping; and with private sector (bus companies) for implementing optimized bus routes and a scrapping program for old buses. Will integrate the RBSMBA management committee; support cleanup campaigns of the bay; development of the <i>Parque Guasu</i> management plan and implementation; support planning and implementation of the green corridor (Outcome 4).</p> <p>Other ongoing initiatives/baseline projects, which contribute towards project's results: In regards to transport, implements the Metrobus Project, the Bus Fleet Renovation Plan and 209 bus stops in the AMA. In addition, a number of infrastructure programs (<i>Costanera</i> Phase II; <i>Ñu Guazu</i> highway and others) and has a portfolio of projects to promote multi-modal transport (e.g. river ferry, commuter</p>

Partner	Responsibilities of the partner in the project’s implementation and other initiatives this partner is implementing that contribute towards the achievement of this project.
	train). It will implement the Riverside Linear Park Project to increase green areas. Regarding solid waste management implements actions to improve the sewerage system in the Asuncion bay area, and will implement the Integrated Sanitation Program of Asuncion for rehabilitation of sewers and waste treatment in the bay and the AMA.
Technical Planning Secretariat (STP)	<p>Responsibility in the project: Development Partner. Co-financier. Member of the Project Board and of the Project Technical Committee. Will participate in development of urban land use plans and sustainable development plans providing overall guidance and alignment with national goals; will lead the establishment of the Platform of AMA Municipal Development Councils and development of the strategy for urban sustainability; will participate in working groups for information system on programs and projects in the AMA; dialogue platforms and national; sustainable city indicators and monitoring/MRV (Outcome 1); traffic management information system (Outcome 2).</p> <p>Other ongoing initiatives/baseline projects, which contribute towards project’s results: Coordinates the National Development Plan 2030, In charge of streamlining national priorities in sectorial programs; provides guidance for urban planning for developing municipal sustainable development plans; manages information systems.</p>
National Emergency Secretariat (SEN)	<p>Responsibility in the project: Development Partner. Co-financier. Member of the Project Board and of the Project Technical Committee. Will participate in mainstreaming of DRR in land use plans/sustainable development plans and in the project’s participating institutions; strengthening capacities for DRR and developing the AMA DRR plan/early warning mechanisms; DRR related sustainable city indicators (Outcome 1); will contribute to mainstream DRR in protected area management plans; will integrate the RBSMBA management committee (Component 4).</p> <p>Other ongoing initiatives/baseline projects, which contribute towards project’s results: responsible for the national disaster risk reduction policy and mainstreaming disaster risk management at national and sub-national levels; implements disaster risk management and emergency response projects in Asuncion.</p>
AMA municipalities (10)	<p>Responsibility in the project: Will participate in development of urban land use plans and sustainable development plans; mainstreaming of DRR at municipal level and strengthening capacities for local risk management; replicating municipal financial strategies for increased investment in infrastructure works; development of information and knowledge system on AMA investment initiatives; dialogue within Municipal Development Councils and the Municipal Councils Platform (Outcome 1). Replication of project interventions (e.g. bicycle lanes, green infrastructure). During the project inception phase (6 months from project start), the STP, in coordination with the other Development Partners, will convene a meeting with the AMA Municipalities to agree on a work plan for their involvement that will include land use planning, development plans, AMA transport system and waste management system, the strengthening of municipal development councils and their integration to the municipal councils platform.</p> <p>Each AMA municipality will strengthen its Municipal Development Council (MDC) as a citizen’s participation space where CSO and public & private sectors interact and where joint actions may be coordinated and implemented to benefit the community. The purpose of AMA MDCs as established by STP are to i) validate and monitor the municipal strategic agenda and priorities; i) to prepare, monitor and assess the MD plan and iii) to promote and facilitate dialogues, consensus and articulation between</p>

Partner	Responsibilities of the partner in the project’s implementation and other initiatives this partner is implementing that contribute towards the achievement of this project.
	<p>different stakeholders and government institutions (municipal, departmental and central).</p> <p>Special attention will be given to ensure the effective participation in these MDC of women, youth, indigenous people and vulnerable populations (poor and extreme poors).</p> <p>Each MDC will appoint a representative to the platform of AMA MDC to be created under the STP leadership to guide the preparation of land use plans, municipal development plans for the AMA region (Output 1.5) and in general AMA’s urban development. In addition to the representatives from the MDC, other stakeholders will join the AMA MDCs Platform such as the Global Compact, GIGA³¹, the Academia, the Paraguayan Network for sustainable cities.</p> <p>Other ongoing initiatives/baseline projects, which contribute towards project’s results: Responsible for developing municipal development plans; provide public services, including managing collection services and controlling final disposal of municipal solid waste; infrastructure; and maintenance of green areas.</p>
National Culture Secretariat (SNC)	<p>Responsibility in the project: Will be invited to be a Member of the Project Technical Committee. Will participate in the development of urban land use plans/sustainable development plans providing inputs in regards to its mandate (Outcome 1). Will coordinate with project activities to promote synergies with its programs. Preliminary discussions with the SNC during PPG phase indicated that further works sessions are required with the Municipality of Asunción, the SEAM, the STP and the MOPC regarding a joint vision for the development of downtown Asuncion. These are expected to occur within the first 6 months of project implementation.</p> <p>Other ongoing initiatives/baseline projects, which contribute towards project’s results: In charge of the Asuncion Historical Center Master Plan for revitalization of Asuncion’s historical center, focusing in social and cultural aspects, including construction of museums, walking tours and revitalization of downtown plazas, among others.</p>
National Tourism Secretariat (SNT)	<p>Responsibility in the project: Will be invited to be a member of the Project Technical Committee. Will participate in the development of land use plans/sustainable development plans providing inputs in regards to its mandate (Outcome 1); development of protected area management plans; integrate the RBSMBA management committee; development of financial plans for protected areas taking into account tourism as an activity to support financial sustainability; support to implementation of the green corridor (Outcome 4). Preliminary discussions with the SNT during the PPG phase indicated that further work sessions are required with the Municipality of Asunción and the SEAM regarding the integration of tourism as a tool for sustainable development in the AMA region. These are expected to occur within the first 6 months of project implementation.</p> <p>Other ongoing initiatives/baseline projects, which contribute towards project’s results: In charge of the Sustainable Development of Paraguay’s Tourism Sector Master Plan; implements tourism promotion programs in Asuncion and AMA.</p>

³¹ GIGA stands for the “Grupo Impulsor de Gran Asuncion (Gran Asuncion Promotion Group)” integrated by social, business, cultural and academic organizations which main purpose is to support and promote sustainable development initiatives, plans, programs and projects oriented towards improving the quality of life in the AMA municipalities and concerning social, economic, environment, cultural and urban issues.

Partner	Responsibilities of the partner in the project's implementation and other initiatives this partner is implementing that contribute towards the achievement of this project.
Ministry of Women	<p>Responsibility in the project: Will be invited to be a member of the Project Technical Committee. Will participate with guidance on gender mainstreaming in development of urban land use plans/sustainable development plans; municipal financial strategies; sustainable city indicators; disaster risk management plans. Will participate in dialogue platforms (Outcome 1).</p> <p>Other ongoing initiatives/baseline projects, which contribute towards project's results: In charge of the 3rd Equal Opportunities Plan; implements gender mainstreaming programs in public policies and sectorial programs, and promotes gender mainstreaming in national and sub-national government institutions.</p>
Meteorological and Hydrological Directorate (DMH)	<p>Responsibility in the project: Will participate with the SEN in the development of the DRR plan and early warning mechanism (Outcome 1).</p> <p>Other ongoing initiatives/baseline projects, which contribute towards project's results: Responsible for the network of meteorological and hydrological stations in the AMA; issues early warnings; produces and disseminates climate-related information.</p>
National University of Asuncion (UNA)	<p>Responsibility in the project: Potential partner for developing specific studies and training programs. Will participate in the development and monitoring of sustainability indicators. Has a framework agreement with the SEAM that may be used to develop specific programs. During the inception phase (6 months from project start), the specific studies and training programs required by the project will be further detailed jointly with the Project Technical Committee (Asuncion Eco-sustainable Task Force).</p>

Table 2. Partnerships with civil society partners

Partner	Responsibilities of the partner in the project's implementation and other initiatives this partner is implementing that contribute towards the achievement of this project.
Paraguayan Sustainable Cities Network	<p>Responsibility in the project: Co-financier. Member of the Project Technical Committee (Asuncion Eco-sustainable Task Force). Will participate in establishing the dialogue platforms and citizenship building; sustainable cities platform/indicators, monitoring/MRV and dissemination of information (Component 1). As a co-financier, the Paraguayan Sustainable Cities Network may be invited to enter into a specific agreement (based on UNDP's policy for the Engagement of NGOs and CSOs as Responsible Parties and based on a capacity assessment) for the sustainable cities monitoring platform and other activities related to the interaction with CSO. Grants to NGO's will be granted in accordance to UNDP Guidance on Micro-Capital Grants</p> <p>Other ongoing initiatives/baseline projects, which contribute towards project's results: Develops capacity building activities of municipalities;</p>
Guyra Paraguay	<p>Responsibility in the project: Co-financier. Member of the Project Technical Committee (Asuncion Eco-sustainable Task Force). Will participate in development of the RBSMBA management plan; implementation of bay cleanup campaigns; migratory bird census in the green corridor (Component 4). As co-financier, Guyra Paraguay may be invited to enter into a specific agreement (based on UNDP's policy for the Engagement of NGOs and CSOs as Responsible Parties and based on a capacity assessment) for activities regarding the RBSMBA Management Plan, cleanup campaigns and the migratory birds census, the details of which would be agreed upon with the SEAM and the Municipality of Asunción during the project's inception phase (first six month from project start). Grants to NGO's will be granted</p>

Partner	Responsibilities of the partner in the project's implementation and other initiatives this partner is implementing that contribute towards the achievement of this project.
	in accordance to UNDP Guidance on Micro-Capital Grants. Other ongoing initiatives/baseline projects, which contribute towards project's results: Supports the development of the RBSMBA management plan; cleanup campaigns of the Asuncion bay; migratory bird inventories and census; tourism activities (bird watching); supports the Parque del Rio green area.
Federation of Neighborhood Associations of Paraguay (FEDEM)	Responsibility in the project: Potential participation in dissemination of information and awareness raising on sustainable city issues to member associations at neighborhood level. Potential member of the dialogue platforms and development of citizenship building programs. Other ongoing initiatives/baseline projects, which contribute towards project's results: Implements citizenship building projects related to participation, advocacy, coordination with municipal governments; strengthening of member organizations; awareness raising.
Associations of waste pickers (<i>gancheros</i> and <i>carriteros</i>) - ASOTRAVERMU - SIGREM - COSIGAPAR - others	Responsibility in the project: Reduce the amount of solid wastes in final disposal sites, contributing to improve environmental and social conditions. Waste pickers will be incorporated in Outcome 3 pilots (cleanup brigade in RBSMBA, collection-separation and recycling activities) Other ongoing initiatives/baseline projects, which contribute towards project's results: Recover valuable materials from municipal solid wastes.
Other NGOs	During the inception phase (6 months from project start), NGOs involved in urban sustainability will be convened by the Project Technical Committee (Asuncion Eco-sustainable Task Force) to share the project's annual work plan and further detail their participation in project activities whether as future co-financiers or sub-contractors under UNDP's guidelines to engage with CSOs as responsible parties. As concerns the solid waste management component, GEAM and ALTERVIDA may be invited to enter into a specific agreement (based on UNDP's policy for the Engagement of NGOs and CSOs as Responsible Parties, and on a capacity assessment) for activities regarding the SW pilots and/or other waste related activities.

Table 3. Partnerships with private sector partners

Partner	Responsibilities of the partner in the project's implementation and other initiatives this partner is implementing that contribute towards the achievement of this project.
Consorzio di Bacino	Responsibility in the project: During the project's inception phase, this Italian consortium of public nature may be invited to enter into a specific agreement with the Municipality of Asuncion and the SEAM for the implementation of the recycling and separation pilot projects based on UNDP's policy for the Engagement of NGOs and CSOs as Responsible Parties and based on a capacity assessment. (Outcome 3). The Consorzio di Bacino is currently involved in the implementation of a UE-funded recycling project in Cuba and Dominican Republic similar to that to be implemented in Paraguay, and has a long standing experience on waste related matters in Italy including consensus-building processes, installation of facilities & equipment and identification of adequate financial mechanisms.
UN Global Compact – 60 member companies	Responsibility in the project: A representative of this compact would be a potential member of the Project Technical committee (Asuncion Eco-sustainable Task Force) and/or of the MDC and/or of the Platform of AMA MDCs to discuss issues such as: development of sustainability indicators related to private sector; urban land use plans, public-private partnerships for financial sustainability and biodiversity

Partner	Responsibilities of the partner in the project’s implementation and other initiatives this partner is implementing that contribute towards the achievement of this project.
	conservation. The compact includes among its members several financial institutions. Opportunities to involve these institutions in micro-lending to support business opportunities identified within the project (Outcomes 3 and 4) with micro-credit and technical assistance will be explored. The compact members may also be interested in getting involved in public-private partnerships within the project. Preliminary discussions with the Global Compact during PPG phase resulted in an interest to be part of the Project’s different work spaces, as will be further discussed and agreed upon project start and annual work plan preparation.

iii. Stakeholder engagement:

181. The project will involve CSOs, private sector associations, waste pickers and recyclers, and local communities, as summarized in Table 4 below.

Table 4. Stakeholders

Key Project Stakeholder	Strategy to ensure Stakeholders are engaged
Civil Society Organizations	The project will involve CSOs in a number of project interventions: consultation and validation processes for development of land use and sustainable development plans and regulatory adjustments; training on urban sustainability themes; participation in the dialogue and coordination platforms, especially the municipal level platform emphasizing in civil society and private sector; development of the Sustainable Cities Platform for monitoring urban sustainability indicators; development and implementation of awareness raising and citizenship building programs; participatory processes for development of protected area management plans; as members of the RBSMBA management committee and of the Project Technical Committee.
Private sector associations	The project will involve private sector associations in a number of project interventions: consultation and validation processes for development of land use and sustainable development plans and regulatory adjustments; training on urban sustainability themes; participation in the dialogue and coordination platforms, especially the municipal level platform emphasizing in civil society and private sector; and/or as members of the Project Technical Committee; development of the Sustainable Cities Platform for monitoring urban sustainability indicators; development of awareness raising and citizenship building programs; participatory processes for development of protected area management plans; and identifying and establishing public-private partnerships with municipalities for developing infrastructure works under the land use plans.
Waste pickers and recyclers	The project will involve waste pickers who recover valuable materials from municipal solid waste streams and make a living out of this activity. The project will encourage participation of waste pickers in the development of business plans (plastic, electronics, cardboard and paper); training; and incorporating waste pickers into formal jobs, namely: the cleanup and monitoring brigade in the RBSMBA, collection-separation pilot, and recycling pilot.
Local communities generating and segregating wastes at household level	The project will undertake awareness campaigns on waste segregation targeting households, neighbors’ associations, schools, businesses and industries located in the area selected for the collection-separation pilot to engage the community in source separation and setting the wastes for collection on the designated days.

iv. Mainstreaming gender:

182. The project has developed a strategy that links the most important gaps identified in relation to its components, the country's reality in terms of equality and the SDGs, in particular Goals 5, 8 and 11. The gaps identified in the analysis and which are considered in the strategy include: parity in decision-making spaces; improvement of women's incomes and livelihoods; a more safe and efficient city for women; and access to, and control of resources. These shortfalls are caused by a lack of capacities of institutions and civil society to promote equality between women and men in a structural manner, that is to say, a lack of capacity for gender mainstreaming. Country specific data generated by the Ministry of Women and international agencies were analyzed, and interviews with local stakeholders were held in order to develop the best strategy for the project.

To this effect and in accordance with the gender mainstreaming strategy:

- 1) Each activity was analyzed to include the necessary elements to guarantee reducing the identified gaps and establishing affirmative actions when necessary.
- 2) Specific activities have been included addressing the empowerment of women (capacities, economic empowerment and access to planning processes).
- 3) Indicators have been included in each project outcome to contribute to measure progress in this field and which will be monitored as part of the M&E process.
- 4) A budget has been included to guarantee the measures and actions to be undertaken.
- 5) Improving the capacities of the project team to manage gender mainstreaming has been considered.

V. FEASIBILITY

i. Cost efficiency and effectiveness:

183. The project will address three main priority challenges that need to be addressed to move along the city towards a more sustainable path: transport, solid waste management and conservation of critical ecosystem services. Project interventions will collectively attend the barriers to addressing these critical urban problems and as such are cost-effective.

184. Project design includes several strategies to ensure cost-effectiveness. It will provide targeted technical assistance to integrate the above-mentioned sectors through an integrated approach to planning and allocating resources that currently does not exist. This will enable defining overall objectives, identify synergies and exploit the cross-sectorial benefits of integrated actions, thus optimizing multiple benefits both locally and globally.

185. By fostering inter-institutional coordination and cooperation as well as operational frameworks (e.g. improved policy and regulatory instruments, financial sustainability mechanisms, long term planning, monitoring systems) a more effective and efficient use of resources of the institutions is expected as well as increased long term funding to sustain project results. Collaboration with national and sub-national institutions and international advice that the project will receive will help to access cost effective field based expertise of the institutions involved in project-related activities. Effective coordination with other programs, projects and initiatives, will serve to reinforce synergies, avoid duplication of efforts and reduce overall costs. Regular coordination meetings with projects and programs will serve to identify complementarity and joint planning and implementation of activities in the field will contribute to cost-effectiveness.

186. Capacity building activities, including training, exchange of experiences and better information management, will enable mainstreaming of urban sustainability and resilience issues in municipal decision-making and management. Awareness raising and citizenship building programs will help civil society get involved, take ownership and participate in the development of a sustainable city.

187. On the ground actions in the transport, waste management and biodiversity conservation sectors are cost-effective as their interconnection at city level explores the opportunities to identify and implement measures with cross-sectorial benefits. Furthermore, pilot demonstrations are the most cost-effective way of proving the validity or feasibility of a process before implementing it at large scale. In this sense, Outcome 2 interventions are cost-effective since they serve the purpose of saving money to the citizen through reducing fuel consumption; reducing health problems through decreasing emissions; promoting the exchange of information, which translates in reduced management time; and promoting a compact city citizen culture. The proposed investments (USD1.5 million) will generate much greater benefits through savings in fuel expenditure and management procedures, gender equality, and reduction of health costs. A study undertaken in New Zealand³² estimated that the benefits accrued in health, air quality, accidents and climate change mitigation are 10 to 25 times greater than the costs associated with implementation of measures.

³² Macmillan A, C.J., Witten K, Kearns R, Rees D, Woodward A. , *The societal costs and benefits of commuter bicycling: simulating the effects of specific policies using system dynamics modeling.* . Environ Health Perspect, 2014. **122**: p. 335–344.

188. The scale of the pilot demonstrations under Outcome 3 represent 1-2% of the current waste management, which is considered sufficient to represent the whole system and generate benefits, based on the discussions carried out with local authorities and stakeholders on the field. The proposed investments (USD1.64 million) in pilots are cost-effective as they integrate collection, segregation and recycling and will apply practices and technologies that are being widely used in different parts of the world.

189. The green corridor concept under Outcome 4 will provide a comprehensive and therefore cost-effective approach to managing green areas for recreation, environmental education and conservation of biodiversity and generating business opportunities for funding green areas (e.g. birdwatching), while at the same time developing synergies with the transport and waste management sectors (eg. Bicycle lanes connected with the green corridor, trash bins for waste separation along bicycle lanes and streets).

190. Stakeholder participation at all project levels will contribute to the cost-effectiveness of the project. The governance (Project Board, Technical Committee) as well as the dialogue platforms will ensure adequate planning and implementation of activities in line with the project objectives, urban sustainability priorities, as well as complementarity with ongoing and planned programs and projects. Coordination mechanisms will be closely linked, ensuring in this manner that stakeholder concerns are up-streamed into higher project management levels and likewise project management decisions are down-streamed to keep stakeholders duly informed. The dialogue platforms will have a key role in this process. The project will benefit from the experiences and knowledge of CSOs, NGOs and private sector participating in the platforms. Systematization of project experiences and lessons learned will contribute to cost-effective upscaling and replication of project results throughout the AMA and other cities of the country, as well as other cities participating in the Sustainable Cities IAP.

ii. Risk Management:

191. The key risks that could threaten the achievement of project results have been summarized in Table 5 below. As per standard UNDP requirements, the Project Coordinator will monitor risks quarterly and report on the status of risks to the UNDP Country Office. The UNDP Country Office will record progress in the UNDP ATLAS risk log. Risks will be reported as critical when the impact and probability are high (i.e. when impact is rated as 5, and when impact is rated as 4 and probability is rated at 3 or higher). Management responses to critical risks will also be reported to the GEF in the annual PIR.

Table 5. Project Risks

Project risks					
Description	Type	Impact & Probability	Mitigation Measures	Owner	Status
Lack of will and commitment of national and sub-national institutions for inter-institutional and inter-sectorial coordination for integrated planning, sharing of information, implementation of integrated actions, and engaging civil society (SEAM, Municipality of Asuncion, MOPC, other municipalities, STP, others)	Organizational	<p>Probability: 3 Impact: 5 Significance: High</p> <p><u>Potential impacts:</u> Implementation of un-coordinated, sector-based approaches will continue. Transport will continue to be unsustainable and GHG increase. Contamination of air, water and soil will continue. Potentially negative impacts of future infrastructure on green areas. Improvement of the quality of life in the AMA would progress at a slower pace.</p>	The mandates and roles of each institution have been taken into account in assigning responsibilities for Project implementation at outcome and output level in order to minimize possible conflicts between the partner institutions. This includes their commitments as well as their co-financing. The Project Board will be responsible for political level dialogue to promote coordination. The participating institutions will sign inter-institutional agreements for coordination and implementation of project interventions. The project will support these institutions in developing an enabling environment for inter-institutional and inter-sectorial coordination through several interventions. Outcome 1 interventions will address strengthening coordination at systemic level. Key actions in this sense include: i) the development of integrated land use and sustainable development plans covering multiple sectors will optimize joint planning exercises and mechanisms; ii) establishing and strengthening dialogue mechanisms (platforms) engaging public, private and civil society stakeholders will serve to raise awareness and reinforce coordination at political, managerial and technical levels; iii) capacity development (including GPSC technical expertise and training) will serve to demonstrate the benefits, current international practice and successful experiences on integration and coordination for urban sustainability. Outcomes 2-4 will implement coordinated actions covering transport, chemicals and solid waste management, and biodiversity conservation to demonstrate in practice the opportunities of integration and coordination.	Veronique Gerard / Caterine Galeano	Identified risk.
Concurrent co-financing for implementation of project actions may not be obtained timely	Organizational	<p>Probability: 3 Impact: 3 Significance: Moderate</p> <p><u>Potential impacts:</u> Delays in implementation of</p>	Participating institutions have signed co-financing letters. The UNDP CO will monitor the co-financing contributions to the project. The Project Board will be responsible for political level dialogue and negotiations to secure co-financing. In addition, the dialogue platform will constitute a forum to promote awareness raising among managers and decision makers on the importance of securing budgets on a timely basis, and with quality and quantity for the foreseen project actions.	Veronique Gerard / Caterine Galeano	Identified risk

Project risks					
Description	Type	Impact & Probability	Mitigation Measures	Owner	Status
		project activities. Potentially a reduction in the scope of the project interventions and impacts.			
Government (national and municipal) partner institutions experience high staff turn-over at political, managerial and technical levels	Organizational	Probability: 4 Impact: 4 Significance: High <u>Potential impacts:</u> Delays in project implementation	The participating institutions will sign inter-institutional agreements for coordination and implementation of project interventions. The project will promote adequate coordination at all levels amongst all institutions and stakeholders, with clearly defined roles and responsibilities and decision-making channels. It will develop institutional mechanisms for coordinated planning and budgeting across sectors and involving multiple stakeholders. This framework is for the medium and long term and is expected to withstand changes in individuals, as well as political shifts. In case of significant changes that may affect project implementation the Project Board and the Project Management Unit will promote high level and/or technical meetings and prepare information materials to inform and raise awareness on the value of the project for urban sustainability and related public policies and programs.	Veronique Gerard / Caterine Galeano	
Construction of the Metrobus project is delayed.	Technical	Probability: 1 Impact: 4 Significance: Moderate <u>Potential impacts:</u> Delay in the integration of the complementary works to the main infrastructure.	Dialogue and coordination between the concerned parties, MOPC, Municipality of Asuncion and IDB will be undertaken within the Project Board.	Veronique Gerard / Caterine Galeano	MOPC has signed the contract for construction of the main trunk line
Establishment and strengthening of IAPA is delayed and therefore it does not assume its role in promoting inter-institutional dialogue and consensus building	Organizational	Probability: 3 Impact: 4 Significance: Moderate <u>Potential impacts:</u>	The project will provide technical assistance to support the Municipality of Asuncion in creating and developing the capacities of the IAPA for integrated urban planning through technical assistance to design its governance system and organizational structure, including organizational manuals, staff job descriptions and performance evaluation system; developing the IAPA's	Veronique Gerard / Caterine Galeano	Identified risk. The Municipality of Asuncion has prepared a draft

Project risks					
Description	Type	Impact & Probability	Mitigation Measures	Owner	Status
		IAPA will not act as the institutional platform to promote inter-municipal dialogue and between the municipalities and central government institutions	strategic plan, including budget and financing sources and an M&E system of the strategic plan and its annual work plans.		ordinance for creation of the IAPA, which must be issued by the Municipal Council
Lack of political will of the AMA municipalities to agree and implement an inter-municipal agreement for integrated management of solid wastes and hazardous chemicals	Political	Probability: 1 Impact: 5 Significance: High <u>Potential impacts:</u> Inadequate management of solid wastes will continue to contaminate air, water and soil with POPs and other hazardous substances affecting the health of local populations. The potential risk of negative impacts on the Paraguay River and the RBSMBA due to the presence of Cateura will continue.	Several project interventions will help raise awareness of authorities on the need of undertaking joint actions to solve current waste management shortfalls. Incorporation of municipalities in the process of developing the AMA land use plans and sustainable development plans, which will include solid waste management, will help raise awareness of the problems of the AMA as a whole and mainstream solid waste in the plans and respective action plans. The dialogue platforms where the municipalities will also participate will help raise awareness on the need of joint actions. The awareness and citizenship building programs will raise civil society's consciousness on this issue. Increased awareness could eventually help motivate the population to demand more attention of the authorities on improving waste management. Business plans (e.g. plastics, electronics, cardboard and paper) will help provide hard data on the economic and financial viability of the proposed collection-separation-recycling activities to show authorities the benefits of improving management. Furthermore, successful demonstration pilots will provide important visibility to the project interventions through showing authorities the differences between a community that manages its solid wastes and a neighboring community that does not. The financial strategy to improve municipal collection capacity will help increase collection. Based on an increase awareness of authorities and visible results of the project interventions, greater funding would be allocated to waste management thus overcoming current financial restrictions.	Veronique Gerard / Caterine Galeano	Identified risk
Lack of interest of civil society and private sector	Organizational	Probability: 1	The dialogue platforms will serve the purpose of helping public, private and civil society stakeholders to recognize	Veronique Gerard / Caterine Galeano	Identified risk

Project risks					
Description	Type	Impact & Probability	Mitigation Measures	Owner	Status
to partner with government institutions in implementing joint efforts addressing urban sustainability		Impact: 3 Significance: Low <u>Potential impacts:</u> Urban interventions will probably follow a top-down approach, and not necessarily reflect the interests, needs and demands these sectors. Experiences and lessons acquired by civil society organizations and private sector in urban development will not be taken into account sufficiently.	themselves as equal and complementary partners in discussing and identifying solutions and actions to promote urban sustainability and resilience. The awareness and citizenship building programs will raise civil society's consciousness on urban sustainability and resilience and encourage involvement. The project will encourage involvement of these stakeholders in project planning, implementation and monitoring through participatory processes.		
Government partners (national and municipal) do not prioritize mainstreaming gender equality and other vulnerable groups in their interventions	Organizational	Probability: 3 Impact: 3 Significance: Moderate <u>Potential impacts:</u> Urban development will not sufficiently incorporate measures to favor equality of women and vulnerable groups; therefore they may not be able to access the full benefits provided by development interventions.	The project has undertaken a gender analysis and identified several capacity shortfalls at institutional level to mainstream gender. A number of measures have been identified and mainstreamed into the project design. The Ministry of Women will be invited to participate in the project's Technical Committee and dialogue platform to provide advice on this subject. It will also participate in the different processes undertaken by the project to provide inputs in this regard (e.g. land use and sustainable development plans, development of training programs). The dialogue platform members will include CSOs that are working in gender mainstreaming.	Veronique Gerard / Caterine Galeano	Identified risk
Informal workers that currently benefit from picking and recycling waste in a semi-formal	Socio-economic	Probability: 3 Impact: 3 Significance: Moderate	The project will support several consensus building exercises between the private and public sector as well as waste pickers associations and NGOs to determine and agree upon the approaches of new waste management	Veronique Gerard / Caterine Galeano	Identified risk

Project risks					
Description	Type	Impact & Probability	Mitigation Measures	Owner	Status
manner within the AMA are opposed to proposed collection-separation-recycling interventions and decide not to participate		<p><u>Potential impact:</u> Risks due to unhealthy working conditions of informal waste pickers will continue.</p> <p>The potential for improving livelihoods through recycling of valuable materials and incorporation of waste pickers in formal jobs will not be demonstrated.</p>	interventions which will ensure to safeguard livelihoods, legitimize informal workers, improve their working conditions and result in financial gains. Experiences from other countries have shown that improved waste separation and classification for recycling purposes can increase substantially the incomes of the waste pickers and transform their work to a more formal setting. The project will develop business plans to demonstrate the economic and financial viability of the proposed interventions, engaging waste pickers in the process to promote their informed decision making and buy-in. Given that female waste pickers will be a priority in the pilot interventions, gender sensitive measures will be undertaken to ensure creating adequate conditions to generate their interest and facilitate their participation. In addition, to ensure success of the pilot interventions incorporating waste pickers, the project will raise awareness of the communities where the collection-separation pilot will be implemented, to engage the population in source separation and setting separated wastes on the designated days for collection.		
Implemented pilot investment project will not continue operation after the project completion	Organizational	<p>Probability: 3 Impact: 2 Significance: Moderate</p> <p><u>Potential impacts:</u> Investment and momentum will be wasted</p>	<p>Pilot investment projects will be sustained before their beginning in a feasibility study under realistic basis.</p> <p>The project will work closely with the government partners in the design and implementation phases, and will provide capacity building to ensure ownership of the pilot projects. Increased awareness of civil society through the project's citizenship building could eventually help motivate the population to demand more attention of the authorities on improving waste management and sustaining the pilot investments. Successful demonstration pilots will provide evidence showing authorities the differences between a community that manages its solid wastes and a neighboring community that does not, thereby contributing to raise awareness of authorities in continuing the initiatives.</p>	Veronique Gerard /Caterine Galeano	Identified risk

iii. Social and environmental safeguards:

192. The project risk has been categorized as moderate. Six risks were identified from the SESP Attachment 1. Social and Environmental Risk Screening Checklist³³ (For more information kindly refer to Annex 15).

193. Under Principle 1 Human Rights, the risk that informal waste pickers (*gancheros*) could not have the capacity to claim their rights. This risk is moderate. The project has taken into consideration the degrading conditions in which the *gancheros* live and work in order to avoid social rejection and to improve their livelihood options by taking appropriate actions in terms of: i) consultations with the affected communities where the collection-separation pilot projects will be implemented; ii) agreements with the informal waste pickers to raise awareness on the pilot's concept and benefits to be implemented, including protocols for handling waste at sanitary landfills and training programs for recyclers, and; iii) awareness raising to promote their informed decision-making, ensure their buy-in, and full and effective engagement.

194. Under Principle 2 Gender Equality and Women's Empowerment, concerns raised by women's groups/leaders during the stakeholder engagement process. This risk is moderate. The project has undertaken a gender analysis and identified several capacity shortfalls at institutional level to mainstream gender. A number of measures have been identified and mainstreamed into the project design. At the national level, the Ministry of Women will be invited to participate in the project's Technical Committee and dialogue platform to provide advice on this subject. It will also participate in the different processes undertaken by the project to provide inputs in this regard (e.g. land use and sustainable development plans, development of training programs). At the municipal level, the project has also included the strengthening of the Gender Units within the Social Area of the 11 AMA municipalities for gender mainstreaming. The dialogue platform members will include CSOs that are working in gender mainstreaming, at the national, municipal, and community stages. Detailed information on gender mainstreaming is included in Sections III. Project Strategy and IV. Results and Partnerships.

195. Under Principle 3, Standard 1 Biodiversity Conservation and Sustainable Natural Resource Management, project activities are located within or adjacent to critical habitats. This is a low risk, as the project will have a positive effect on the protection of critical habitats and protected green areas global significance within the metropolitan region and the AMA's area of influence. The project has been designed to have a positive result on degraded and modified habitats as well as on increasing the protection of natural and critical habitats.

196. Under Standard 3 Community, Health, Safety and Working Conditions, the project involves large-scale infrastructure development. This risk is moderate. Ground actions to address the most critical problem of the transport sector within the AMA include a large-scale investment: the Bus Rapid Transport (BRT) corridor and bus stops. The large-scale investment of the BRT Metrobus has been designed in such a way as to follow international best practices from environmental and social stand-points in order to avoid any possible risk and negative impact on the affected communities; since this sort of investments has also to comply with the social and environmental policies and procedures of the major investor, the Interamerican Development Bank (IDB) and the national recipient institution, MOPC. In the same approach, the design and construction of access facilities to increase mobility and resilience with feeder routes and connecting hubs enhances the most appropriate routes and strengthening these with pilot

³³ Social and Environmental Screening Procedure. UNDP, 2014.

eco-sustainable bus stop shelters to provide passengers with protection against weather and a safe place to wait for a public bus, with special emphasis for the elderly, women, and children.

197. Under Standard 6 Indigenous Peoples, there are indigenous peoples present in the project area, in particular in the area of influence of the Cateura dumpsite, although they will not be affected by project activities. Waste pickers are the most direct beneficiaries of the project due to enhanced human-living conditions since the project will create more decent human conditions for their activity, including pilot interventions for separation-collection-transport-classification-packaging-recycling of waste and will promote a better living environment in the surroundings of existing dump sites. On the other hand, for the general public where there are several segments of indigenous peoples, the project enhances to a safer and more reliable public transport system, as well as and more relaxing and safer outdoor conditions for mobility and for visiting public parks and protected areas.

198. Under Standard 7 Pollution Prevention and Resource Efficiency, the risk is low. The project will pilot an integrated municipal solid waste and hazardous waste management system (separation-collection-transport-classification-packaging-recycling) that will help national and municipal institutions increase their knowledge on the system and acquire experience to implement it; including the execution of three pilot projects.

199. Environmental and social grievances will be reported to the GEF in the annual PIR.

iv. Sustainability and Scaling Up:

200. *Sustainability:* The project has been designed to create an enabling framework for a sustainable city through enhanced inter-institutional and inter-sectorial coordination, integrating sectorial planning, and defining short, medium and long-term goals, thus ensuring sustainability. In this sense, Outcome 1 of the project is specifically designed to promote project sustainability since it is focused on the medium and long term. It will ensure that the benefits derived from integrated planning and budgeting are mainstreamed into the city's decision-making processes.

201. The optimization of joint planning exercises, strengthened dialogue, improved policy and regulatory instruments, and better coordination in the implementation of the different development initiatives will help the project partners and especially the participating government institutions to overcome the predominant culture of short term planning, sector-based solutions and the influence of political interests in prioritizing interventions, and develop a discipline of coordinating and collaborating under a common long term vision, thus ensuring sustainability of project results.

202. The establishment of sustainable finance mechanisms, namely a strategy to improve municipal collection, a PES scheme for urban green areas, a transport NAMA, and business plans for key protected areas will improve revenues and provide access to new funding opportunities that will enable the public stakeholders to allocate increasing funds and ensure long term funding to implement urban infrastructure within the common framework of the land use and sustainable development plans.

203. Capacity development will enable project partners to improve their capacities for planning, implementation and monitoring of urban, resilient, adaptive and sustainable growth through training tailored to the specific stakeholder needs and demands; information management systems to facilitate information and knowledge sharing; and MRV systems to track progress. Collaboration with the GPSC will ensure that the most up to date knowledge and international high-level expertise on urban sustainability and resilience is available to the project partners in building the new capacities.

204. By strengthening and updating the existing policy and regulatory framework and building the capacities of the institutions, the project will generate a much more cohesive and well-funded governance framework that will be better prepared to efficiently and effectively promote transport oriented development, manage solid wastes and chemicals, and conserve globally significant biodiversity. Outcomes 2-4 will implement coordinated actions covering these sectors to demonstrate in practice the opportunities of integration and coordination thus delivering solutions to global environment problems in a cost effective way. The proposed on the ground actions (e.g. reducing fossil fuel consumption, facilitating access to information, reducing traffic congestion, increase mobility and connectivity under Outcome 2; waste collection, separation and recycling, and improvement of livelihoods of a marginalized population sector under Outcome 3; and green infrastructure development, and protected area management and funding for conservation of biodiversity under Outcome 4) will serve to demonstrate ways to reduce the AMA's ecological footprint and that can be mainstreamed into medium and long term public policies. By demonstrating that these proposals offer practical solutions to environmental and social problems it is expected that the national and municipal governments will incorporate these strategies in their day-to-day management

205. Dialogue and the development of partnerships will be essential tools for building consensus, enabling coordinated planning and regulatory oversight and encouraging sustainable forms of investment. The creation and strengthening of the IAPA will provide an institutional platform to promote inter-municipal dialogue and between the municipalities and central government institutions. The dialogue platforms emphasizing participation of civil society and private sector will constitute a long-term space where the public, private and civil society stakeholders will recognize themselves as equal and complementary partners and take ownership in discussing and identifying joint solutions and actions to promote urban sustainability and resilience.

206. The awareness and citizenship building programs will raise civil society's consciousness on urban sustainability and resilience issues. Increased awareness could eventually help motivate the population to demand more attention of the authorities to the solution of the most critical urban problems of the AMA.

207. *Scaling up:* The project will generate significant experiences and lessons to promote upscaling of results. Under Outcome 1 the development of the land use and sustainable development plans will provide valuable feedback in terms of integrated planning covering multiple sectors that will help improving the STP's guidelines for developing such plans. This will be useful to the municipalities of the whole country to help them mainstream integrated urban sustainability and resilience in developing their own plans. The financial mechanisms, namely the municipal collection improvement strategy and the PES schemes will be replicable by municipalities nationwide. The policy and regulatory instruments to be developed will be applicable at different scales. The mobility and connectivity survey will provide data on the whole of the AMA, therefore the information may be used by the different municipalities. The inventories and inspection guidelines on hazardous chemicals will have a national scope. Guidelines and safeguards for closure of the Cateura dumpsite will be replicable to other legal dumpsites. The citizen participation protocols will be made available to other municipalities for use and adoption. The experience on the dialogue platforms will be shared with other cities so that they may replicate the platforms. The national strategy for urban sustainability to be developed through the national level dialogue platform will provide a nationwide framework to promote urban sustainability and resilience. Development of the Sustainable Cities Platform and MRV system will provide lessons that may be replicated not only to other cities in the country but at international level in other cities where Sustainable Cities Networks have been established or may be established in the future.

208. Outcome 2 activities address a problem of high dependency of motorized traffic, which is not merely a problem of the AMA but of many emerging large metropolitan regions around the world. The pilot interventions will provide solutions that may be replicated within the country and globally. The

regulations for the Bicycle Lanes Law and the air quality standards have a national scope. The design and protocols for construction of bus stop shelters may be applied by other cities. The lessons provided by the traffic management measures (parking charges and restrictions, one-way streets, reversible lanes, traffic signs, and dedicated bus lanes) will be replicable at national level in different cities and at different scales. The web-based information platform on traffic management will have a flexible design so that it may be adapted for use in other cities.

209. The inter-municipal agreement for integrated chemicals and solid wastes management under Outcome 3 will provide a framework for replication of experience and lessons acquired through the pilot demonstrations. The cleanup brigade in the RBSMBA can be replicated in other areas where there are illegal dumpsites affecting the streams and green areas within the AMA and other cities of the country as well. The collection-separation and recycling interventions under Outcome 3, although they represent the reduction of only 1-2% of the total solid wastes generated, will have a significant impact at institutional and regulatory levels; therefore the expected impact of the project when the pilots are established may be conservatively estimated in the reduction of 5% of the wastes generated, and will increase beyond the project's lifetime. The experiences, lessons and impacts will be documented in case studies to facilitate further replication within the AMA. The collection-separation and recycling pilots by themselves will provide important visibility showing authorities the differences between a community that manages its solid wastes and a neighboring community that does not, raising awareness and interest for replication. Installed capacities for developing business plans for wastes (plastic, electronics, cardboard and paper) will enable replication by the AMA municipalities, developing new business plans and promoting formal waste management activities that improve the livelihoods of waste pickers.

210. The information center in the *Parque Guasu* will be key in disseminating information within the AMA to promote replication of lessons acquired under Outcome 4. The green corridor to be established within Asuncion can be extended to the neighboring municipalities through incorporating the green areas within these municipalities, and the guidelines for managing the corridor will be applicable by any other municipality that wishes to implement the green corridor concept. Likewise, the guidelines for determining plant species and species mixes will serve to promote and guide tree planting by institutions and individuals within the AMA. The financial and business plans for protected areas constitute an innovative approach to ensure adequate funding for protected area management. These plans will be replicable by the SEAM to other protected areas within the National Protected Area System. The waste cleanup campaigns of the Asuncion Bay may serve as examples to encourage citizens in undertaking waste cleanup campaigns of their neighborhoods or green areas in their cities.

211. The different gender mainstreaming strategies to be promoted are innovative (e.g. promotion of masculinities in institutions, gender-sensitive municipal budgets, reduction of gender based violence in transport, measures to facilitate incorporation of female waste pickers into formal jobs to improve their livelihoods, measures to encourage equal use of green areas, recreational spaces, bicycle lanes and other infrastructure by men and women) and will generate a number of lessons that will be documented and shared with the relevant institutions and with the Ministry of Women so that it may promote replication of the strategies through their work with different national and sub-national institutions.

212. Information dissemination through the GPSC knowledge management strategies will enable sharing the experiences and lessons with the different cities and institutions involved in implementation of the Sustainable Cities IAP. This will be accomplished through knowledge transfer activities that support urban investments, peer to peer work, participation in working groups on specific issues, documentation and outreach activities promoted by GPSC.

VI. PROJECT RESULTS FRAMEWORK

This project will contribute to the following Sustainable Development Goal (s):					
Goal 11: Make cities and human settlements inclusive, safe, resilient and sustainable.					
This project will contribute to the following country outcome included in the UNDAF/Country Programme Document:					
Outcome 1.1: Paraguay will have progressed in protecting and guaranteeing the rights of all individuals, with emphasis on vulnerable and discriminated populations					
Outcome 2.1: Devolution and accountability: Paraguay will have reduced poverty levels, established decent work and guaranteed improvement of working population's income					
Outcome 3.1: Paraguay will have reduced its disaster risks and increased community resilience and responsiveness to emergencies and disasters.					
Outcome 3.2: Paraguay will have achieved significant progress in reducing deforestation and desertification, in best practices of biodiversity conservation and sustainable use, and in climate change mitigation and adaptation.					
This project will be linked to the following output of the UNDP Strategic Plan:					
Output 1.3: Solutions developed at national and sub-national levels for sustainable management of natural resources, ecosystem services, chemicals and waste.					
	Objective and Outcome Indicators	Baseline	Mid-term Target	End of Project Target	Assumptions
Project Objective: Improve the quality of life in the Asuncion Metropolitan Area (AMA) and deliver multiple benefits through the integration of transport and solid waste management and green infrastructure into a framework for a sustainable and resilient city	Number of new partnership mechanisms with funding for sustainable management solutions of natural resources, ecosystem services, chemicals and waste at national and/or sub-national level.	0	1 (Asuncion Autonomous Planning Institute established)	1 (Asuncion Autonomous Planning Institute consolidated and functioning with work plans and budget)	Political will to develop partnership mechanisms in association with different sectors and allocation of financial, technical and administrative resources for sustainability of results.
	Number of direct participation structures of civil society, disaggregated by sex, in urban planning and management that operate regularly and democratically ³⁴	0	1 (Platform of AMA Municipal Development Councils with public, private and civil society stakeholders established, with at least 40% membership of either sex)	1 (Platform of AMA Municipal Development Councils with public, private and civil society stakeholders functioning with work plans and budget, with at least 40% membership of either sex)	Political will to incorporate key stakeholders with emphasis in civil society to participate in urban planning, implementation and monitoring processes. Interested private and civil society sector parties willing to engage with public sector in citizenship participation processes with gender sensitive approaches.
	Quantity of GHG emissions mitigated and sequestered through transport oriented development, green infrastructure and solid waste management policy uptake (tons of CO2e)	Transport: 0 Solid Waste: 0 Green Infrastructure: 972,232 Total: 972,232	Transport: 45,500 (bicycle paths) Solid Waste: 55 Green Infrastructure: 972,232 (carbon stock maintained) Total: 1,017,787	Transport: 255,100 (bicycle paths and BRT) Solid Waste: 110 Green Infrastructure: 972,232 (carbon stock maintained) Total: 1,227,442	Participating national and municipal institutions and private sector are willing to make the required investments for adequate implementation of GHG emissions reductions.

³⁴ This is indicator 11.3.2, Target 11.3 of SDG Goal 11 and is used as a more specific indicator than the most appropriate one in the IRFF

	Quantity of UPOP emissions reduced through an integrated waste and chemical management system (gTEQ)	132.53 (due to uncontrolled combustion and landfills)	6.6	13.2	Participating national and municipal institutions and private sector are willing to make the required investments for adequate implementation of UPOP emissions reductions.
	Increase in 1% of global populations (number of individuals) of 5 species found seasonally at site: Buff-breasted Sandpiper (<i>Tryngites subruficollis</i>); American Golden Plover (<i>Pluvialis dominica</i>); Lesser Yellowlegs (<i>Tringa flavipes</i>); White-rumped Sandpiper (<i>Calidris fuscicollis</i>); and Pectoral Sandpiper (<i>Calidris melanotos</i>)	Buff-breasted Sandpiper: 7 American Golden Plover: 5 Lesser Yellowlegs: 2 White-rumped Sandpiper: 37 Pectoral Sandpiper: 70	Buff-breasted Sandpiper: 350 American Golden Plover: 250 Lesser Yellowlegs: 150 White-rumped Sandpiper: 700 Pectoral Sandpiper: 1500	Buff-breasted Sandpiper: 800 American Golden Plover: 600 Lesser Yellowlegs: 400 White-rumped Sandpiper: 1500 Pectoral Sandpiper: 3700	Participating national and municipal institutions are willing to make the required investments for adequate implementation of biodiversity conservation measures.
Outcome 1 Enabling framework for a green sustainable city enhances integrated urban planning of the AMA	Level of capacity improvement of 3 institutions with mandates in sustainable city issues, measured through the UNDP Capacity Scorecard, with gender approach	SEAM: 1.02 M.A.: 0.53 MOPC: 1.66 (maximum score: 3)	SEAM: 1.60 M.A.: 1 MOPC: 2 (maximum score: 3)	SEAM: 2 M.A.: 1.6 MOPC: 2.5 (maximum score: 3)	The three institutions recognize the need to improve institutional processes, collaboration and cooperation to better fulfill their mandates and incorporating issues related to gender equality, social inclusion and vulnerable groups, and implement proposed improvements.
	Level of improvement of institutional capacities in planning, implementation and monitoring of urban, resilient, adaptive and sustainable growth of 3 institutions measured through the Sustainable City Capacity Scorecard, with gender approach	Sustainable City Capacity Scorecard to be developed and applied in project year 1	<i>Tbd</i> in year 1	<i>Tbd</i> in year 1	The participating institutions recognize the need to improve institutional processes, collaboration and cooperation for sustainable and resilient urban planning incorporating issues related to gender equality, social inclusion and vulnerable groups, and implement proposed improvements.
	Percentage of increase of the municipal budget allocated to infrastructure works for the development of a sustainable city (Municipality of Asuncion)	19 (USD 27.3M of USD 143.6M in 2015)	25	30	Municipality bodies (executive and legislative) are willing to jointly prioritize increased annual allocations for infrastructure works in the municipal budgets.
	Surface area (hectares) with improved biodiversity conservation from infrastructure development restrictions through mainstreaming green corridor restrictions and finance into urban plans and transport environmental impact assessments.	7,854 (Infrastructure development restrictions not mainstreamed into urban plans and EIA to ensure biodiversity)		7,854 (Green areas, including green corridor, other green areas outside the corridor, and water bodies – rivers, streams and lakes;	SEAM, Municipality of Asuncion and MOPC incorporate the green areas/infrastructure into their institutional management; allocate resources (financial, technical and administrative) for adequate management; and enforce regulations

		conservation)		and finance mainstreamed into urban plans and transport EIA) ³⁵	
Outcome 2 Sustainable and safe mobility and transport in metropolitan Asunción for reducing GHG emissions from urban transport	Number of urban passengers riding the alternative of low carbon BRT system - considering gender equality, time improvement and safety.	0 riders	Maximum of 230,000 passenger per day	240,000 passengers (baseline plus 2 years of growth a 2.2%)	Design of routes takes into account differentiated uses of transport by gender, time efficiency and safety related issues. By Project end, survey carried out accurately reflects overall quality improvement.
	Number of kilometers of dedicated urban bicycle paths constructed and maintained	1	40	100	MOPC and Municipality of Asuncion collaborate and coordinate the design, construction and maintenance of bicycle paths.
	Number of pilot traffic management measures implemented (e.g. parking charges and restrictions, temporal one-way street implementation, reversible lanes, traffic signs, and dedicated bus lanes in a major city street)	0	2	8	STP, MOPC, SEAM and Municipality of Asuncion are willing to share the information generated by each institution and manage the implementation of pilot interventions in a coordinated manner.
	Number of bus routes optimized to complement the BRT and including the construction of bus stop shelters for optimized passenger experience	0	10	30	MOPC and private sector are willing to coordinate and agree on the restructuring of bus routes. MOPC and Municipality of Asuncion coordinate the implementation of bus stop shelters.
	Number of scrapped buses due to implementation of new vehicle emissions, maintenance and scratching standards for public transport vehicles	0	50	100	MOPC, BRT project, municipalities and private sector are willing to collaborate and agree on the buses that will be scrapped.
	Outcome 3 Improved chemicals and waste management system for reducing emissions of UPOPs, GHGs and toxic chemicals	Number of tons/day of wastes managed through a pilot on collection and separation of MSW	0	5 (2% of total)	10 (10% of total)
Number of tons of materials recovered/ recycled/day through a pilot on recovery of the value contained in MSW		0	3	6	Municipalities and workers are willing to coordinate in the implementation of MSW management measures. Business plans demonstrate positive results for implementation of pilot

³⁵ This area comprises: 3,565 has of green areas (protected areas, parks, plazas), 2,985 has of green areas in built-up areas (patios, backyards and empty lots) and 1,304 ha of water bodies (rivers, streams and lakes).

					recycling interventions.
	Percentage of increase in incomes of waste pickers incorporated into pilot waste management facility (at least 50% of workers are female).	USD 14-30/day	20 (USD 16.8-36)	50 (USD 21-45)	Female waste pickers are willing to be incorporated in formal jobs and improve their livelihoods.
Outcome 4 Emplacing and improving Protected Area and Urban Green Infrastructure management	Level of improvement of management effectiveness score of 3 urban protected areas, measured by the GEF/METT	BSMyBA: 31 Parque Guasu: 41 Jardin Botánico: 52	BSMyBA: 65 Parque Guasu: 65 Jardin Botánico: 75	BSMyBA: 80 Parque Guasu: 85 Jardin Botánico: 90	SEAM, Municipality of Asuncion and MOPC are willing to build their capacities, collaborate and cooperate for protected area management. MOPC is willing to provide financial support to protected areas through its investments programs. Civil society is aware, takes care and gets involved in protected area management.
	Number of hectares of green areas with improved management	5,770 (Green corridor not officially recognized)	Management effectiveness tool to be defined as part of the establishment of the green corridor.	5,793 (Green corridor 2 new linear parks including) is officially recognized; being managed under an ecosystem approach and incorporated into sector EIA guidance An increase in management effectiveness. Target to be established once tool is available	SEAM, Municipality of Asuncion and MOPC incorporate the green corridor into their institutional management and coordinate allocation of resources (financial, technical and administrative) for adequate management. Civil society aware and participating in taking care of the green corridor.
	Number of hectares of habitats in Bahia de Asuncion recovered and secured for 28 species of Nearctic migratory birds and 47 species of southern South American migratory birds	0	20	40	SEAM, Municipality of Asuncion, MOPC and other stakeholders coordinate actions to improve, restore and maintain habitats. Civil society involved in restoration activities and taking care of restored habitats.
	Number of persons using green areas (disaggregated by sex) who are involved in the improvement processes, understand the links with quality of life and cultural richness and feel safe	0	30% of users (at least 20% women)	50% of users	Civil society is involved in restoration activities and in taking care of habitats.
Outcome 5 Dissemination of Lessons-learned, monitoring & evaluation	Level of project implementation and achievement of results (percentage of budgetary execution)		65	100	Project partners have the political will to make progress toward a sustainable city, assume project ownership and ensure sustainability of results.

	Mid-term review report and final evaluation report		1 (MTR)	1 (Final evaluation)	Findings from the MTR will be used to revise the project's progress and to establish the corrective measures to achieve project objectives.
	Number of publications on best practices and lessons learned (at least 1 on gender)		4	4	Project partners are open about project challenges and successes, as well as lessons-learned so these can be captured, published and disseminated at national and international level.

VII. MONITORING AND EVALUATION (M&E) PLAN

213. The project results as outlined in the project results framework will be monitored annually and evaluated periodically during project implementation to ensure the project effectively achieves these results. Supported by Project Component 5 “*Dissemination of lessons learned, monitoring & evaluation*” the project monitoring and evaluation plan will also facilitate learning and ensure knowledge is shared and widely disseminated to support the scaling up and replication of project results.

214. Project-level monitoring and evaluation will be undertaken in compliance with UNDP requirements as outlined in the [UNDP POPP](#) and [UNDP Evaluation Policy](#). While these UNDP requirements are not outlined in this project document, the UNDP Country Office will ensure UNDP M&E requirements are met in a timely fashion and to high quality standards. Additional mandatory GEF-specific M&E requirements (as outlined below) will be undertaken in accordance with the [GEF M&E policy](#) and other relevant GEF policies.

215. In addition to these mandatory UNDP and GEF M&E requirements, other M&E activities deemed necessary to support project-level adaptive management will be agreed during the Project Inception Workshop and will be detailed in the Inception Report. This will include the exact role of project target groups and other stakeholders in project M&E activities including the GEF Operational Focal Point and national/regional institutes assigned to undertake project monitoring. The GEF Operational Focal Point will strive to ensure consistency in the approach taken to the GEF-specific M&E requirements (notably the GEF Tracking Tools) across all GEF-financed projects in the country.

M&E Oversight and monitoring responsibilities:

216. Project Coordinator: The Project Coordinator is responsible for day-to-day project management and regular monitoring of project results and risks, including social and environmental risks. The Project Coordinator will ensure that all project staff maintain a high level of transparency, responsibility and accountability in M&E and reporting of project results. The Project Coordinator will inform the Project Board, the UNDP Country Office and the UNDP-GEF RTA of any delays or difficulties as they arise during implementation so that appropriate support and corrective measures can be adopted.

217. The Project Coordinator will develop annual work plans based on the multi-year work plan included in Annex A, including annual output targets to support the efficient implementation of the project. The Project Coordinator will ensure that the standard UNDP and GEF M&E requirements are fulfilled to the highest quality. This includes, but is not limited to, ensuring the results framework indicators are monitored annually in time for evidence-based reporting in the GEF PIR, and that the monitoring of risks and the various plans/strategies developed to support project implementation (e.g. gender strategy, knowledge management strategy, etc.) occur on a regular basis.

218. Project Board: The Project Board will take corrective action as needed to ensure the project achieves the desired results. The Project Board will hold project reviews to assess the performance of the project and appraise the Annual Work Plan for the following year. In the project’s final year, the Project Board will hold an end-of-project review to capture lessons learned and discuss opportunities for scaling up and to highlight project results and lessons learned with relevant audiences. This final review meeting will also discuss the findings outlined in the project terminal evaluation report and the management response.

219. Project Implementing Partner: The Implementing Partner is responsible for providing any and all required information and data necessary for timely, comprehensive and evidence-based project reporting,

including results and financial data, as necessary and appropriate. The Implementing Partner will strive to ensure project-level M&E is undertaken by national institutes, and is aligned with national systems so that the data used by and generated by the project supports national systems.

220. **UNDP Country Office:** The UNDP Country Office will support the Project Coordinator as needed, including through annual supervision missions. The annual supervision missions will take place according to the schedule outlined in the annual work plan. Supervision mission reports will be circulated to the project team and Project Board within one month of the mission. The UNDP Country Office will initiate and organize key GEF M&E activities including the annual GEF PIR, the independent mid-term review and the independent terminal evaluation. The UNDP Country Office will also ensure that the standard UNDP and GEF M&E requirements are fulfilled to the highest quality.

221. The UNDP Country Office is responsible for complying with all UNDP project-level M&E requirements as outlined in the [UNDP POPP](#). This includes ensuring the UNDP Quality Assurance Assessment during implementation is undertaken annually; that annual targets at the output level are developed, and monitored and reported using UNDP corporate systems; the regular updating of the ATLAS risk log; and, the updating of the UNDP gender marker on an annual basis based on gender mainstreaming progress reported in the GEF PIR and the UNDP ROAR. Any quality concerns flagged during these M&E activities (e.g. annual GEF PIR quality assessment ratings) must be addressed by the UNDP Country Office and the Project Coordinator.

222. The UNDP Country Office will retain all M&E records for this project for up to seven years after project financial closure in order to support ex-post evaluations undertaken by the UNDP Independent Evaluation Office (IEO) and/or the GEF Independent Evaluation Office (IEO).

223. **UNDP-GEF Unit:** Additional M&E and implementation quality assurance and troubleshooting support will be provided by the UNDP-GEF Regional Technical Advisor and the UNDP-GEF Directorate as needed.

224. **Audit:** The project will be audited according to UNDP Financial Regulations and Rules and applicable audit policies.³⁶

Additional GEF monitoring and reporting requirements:

225. **Inception Workshop and Report:** A project inception workshop will be held within two months after the project document has been signed by all relevant parties to, amongst others:

- a) Re-orient project stakeholders to the project strategy and discuss any changes in the overall context that influence project implementation;
- b) Discuss the roles and responsibilities of the project team, including reporting and communication lines and conflict resolution mechanisms;
- c) Review the results framework and finalize the indicators, means of verification and monitoring plan;
- d) Discuss reporting, monitoring and evaluation roles and responsibilities and finalize the M&E budget; identify national/regional institutes to be involved in project-level M&E; discuss the role of the GEF OFP in M&E;

³⁶ See guidance here: <https://info.undp.org/global/popp/frm/pages/financial-management-and-execution-modalities.aspx>

- e) Update and review responsibilities for monitoring the various project plans and strategies, including the risk log; Environmental and Social Management Plan and other safeguard requirements; the gender strategy; the knowledge management strategy, and other relevant strategies;
- f) Review financial reporting procedures and mandatory requirements, and agree on the arrangements for the annual audit; and
- g) Plan and schedule Project Board meetings and finalize the first year annual work plan.

226. The Project Coordinator will prepare the inception report no later than one month after the inception workshop. The inception report will be cleared by the UNDP Country Office and the UNDP-GEF Regional Technical Adviser, and will be approved by the Project Board.

227. GEF Project Implementation Report (PIR): The Project Coordinator, the UNDP Country Office, and the UNDP-GEF Regional Technical Adviser will provide objective input to the annual GEF PIR covering the reporting period July (previous year) to June (current year) for each year of project implementation. The Project Coordinator will ensure that the indicators included in the project results framework are monitored annually in advance of the PIR submission deadline so that progress can be reported in the PIR. Any environmental and social risks and related management plans will be monitored regularly, and progress will be reported in the PIR.

228. The PIR submitted to the GEF will be shared with the Project Board. The UNDP Country Office will coordinate the input of the GEF Operational Focal Point and other stakeholders to the PIR as appropriate. The quality rating of the previous year's PIR will be used to inform the preparation of the subsequent PIR.

229. Lessons learned and knowledge generation: Results from the project will be disseminated within and beyond the project intervention area through existing information sharing networks and forums. The project will identify and participate, as relevant and appropriate, in scientific, policy-based and/or any other networks, which may be of benefit to the project. The project will identify, analyse and share lessons learned that might be beneficial to the design and implementation of similar projects and disseminate these lessons widely. There will be continuous information exchange between this project and other projects of similar focus in the same country, region and globally.

230. GEF Focal Area Tracking Tools: The following GEF Tracking Tool(s) will be used to monitor global environmental benefit results: The baseline/CEO Endorsement GEF Focal Area Tracking Tool(s) – submitted in Annex D to this project document – will be updated by the Project Coordinator /Team and shared with *the* mid-term review consultants and terminal evaluation consultants (not the evaluation consultants hired to undertake the *MTR* or the *TE*) before the required review/evaluation missions take place. The updated GEF Tracking Tool(s) will be submitted to the GEF along with the completed Mid-term Review report and Terminal Evaluation report.

231. Independent Mid-term Review (MTR): An independent mid-term review process will begin after the second PIR has been submitted to the GEF, and the MTR report will be submitted to the GEF in the same year as the 3rd PIR. The MTR findings and responses outlined in the management response will be incorporated as recommendations for enhanced implementation during the final half of the project's duration. The terms of reference, the review process and the MTR report will follow the standard templates and guidance prepared by the UNDP IEO for GEF-financed projects available on the [UNDP Evaluation Resource Center \(ERC\)](#). As noted in this guidance, the evaluation will be 'independent, impartial and rigorous'. The consultants that will be hired to undertake the assignment will be independent from organizations that were involved in designing, executing or advising on the project to be evaluated. The GEF Operational Focal Point and other stakeholders will be involved and consulted during the terminal evaluation process. Additional quality assurance support is available from the UNDP-

GEF Directorate. The final MTR report will be available in English and will be cleared by the UNDP Country Office and the UNDP-GEF Regional Technical Adviser, and approved by the Project Board.

232. **Terminal Evaluation (TE):** An independent terminal evaluation (TE) will take place upon completion of all major project outputs and activities. The terminal evaluation process will begin three months before operational closure of the project allowing the evaluation mission to proceed while the project team is still in place, yet ensuring the project is close enough to completion for the evaluation team to reach conclusions on key aspects such as project sustainability. The Project Coordinator will remain on contract until the TE report and management response have been finalized. The terms of reference, the evaluation process and the final TE report will follow the standard templates and guidance prepared by the UNDP IEO for GEF-financed projects available on the [UNDP Evaluation Resource Center](#). As noted in this guidance, the evaluation will be ‘independent, impartial and rigorous’. The consultants that will be hired to undertake the assignment will be independent from organizations that were involved in designing, executing or advising on the project to be evaluated. The GEF Operational Focal Point and other stakeholders will be involved and consulted during the terminal evaluation process. Additional quality assurance support is available from the UNDP-GEF Directorate. The final TE report will be cleared by the UNDP Country Office and the UNDP-GEF Regional Technical Adviser, and will be approved by the Project Board. The TE report will be publically available in English on the UNDP ERC.

233. The UNDP Country Office will include the planned project terminal evaluation in the UNDP Country Office evaluation plan, and will upload the final terminal evaluation report in English and the corresponding management response to the UNDP Evaluation Resource Centre (ERC). Once uploaded to the ERC, the UNDP IEO will undertake a quality assessment and validate the findings and ratings in the TE report, and rate the quality of the TE report. The UNDP IEO assessment report will be sent to the GEF IEO along with the project terminal evaluation report.

234. **Final Report:** The project’s terminal PIR along with the terminal evaluation (TE) report and corresponding management response will serve as the final project report package. The final project report package shall be discussed with the Project Board during an end-of-project review meeting to discuss lesson learned and opportunities for scaling up.

Table 6. Mandatory GEF M&E Requirements and M&E Budget:

GEF M&E requirements	Primary responsibility	Indicative costs to be charged to the Project Budget ³⁷ (US\$)		Time frame
		GEF grant	Co-financing	
Inception Workshop	UNDP Country Office	USD 11,000	USD 25,663	Within two months of project document signature
Inception Report	Project Coordinator	None	None	Within two weeks of inception workshop
Standard UNDP monitoring and reporting requirements as outlined in the UNDP POPP	UNDP Country Office	None	None	Quarterly, annually

³⁷ Excluding project team staff time and UNDP staff time and travel expenses.

GEF M&E requirements	Primary responsibility	Indicative costs to be charged to the Project Budget ³⁷ (US\$)		Time frame
		GEF grant	Co-financing	
Monitoring of indicators in project results framework	Project Coordinator	Per year: USD 4,000 (USD 20,000)	USD 46,663	Annually
GEF Project Implementation Report (PIR)	Project Coordinator and UNDP Country Office and UNDP-GEF team	None	None	Annually
NIM Audit as per UNDP audit policies	UNDP Country Office	Per year: USD 2,000 (USD10,000)	USD 23,330	Annually or other frequency as per UNDP Audit policies
Lessons learned and knowledge generation	Project Coordinator	None	None	Annually
Monitoring of environmental and social risks, and corresponding management plans as relevant	Project Coordinator UNDP CO	None	None	On-going
Addressing environmental and social grievances	Project Coordinator UNDP Country Office BPPS as needed	None for time of project coordinator, and UNDP CO	None	
Project Board meetings and annual planning workshops	Project Board UNDP Country Office Project Coordinator	Per year: USD 2,000 (USD 10,000)	USD 23,330	At minimum annually
Supervision missions	UNDP Country Office	None ³⁸	USD 10,000	Annually
Oversight missions	UNDP-GEF team	None ³⁸	USD 10,000	Troubleshooting as needed
Knowledge management as outlined in Outcome 4	Project Coordinator	1% of GEF grant USD 74,931	USD 164,814	On-going
GEF Secretariat learning missions/site visits	UNDP Country Office and Project Coordinator and UNDP-GEF team	None		To be determined.
Independent Mid-term Review (MTR), management response and Mid-term Tracking Tool	UNDP Country Office and Project team and UNDP-GEF team (International and national consultants)	USD 45,000	USD 104,650	Between 2 nd and 3 rd PIR.
Independent Terminal Evaluation (TE) included in UNDP evaluation plan, management response and Terminal Tracking Tool	UNDP Country Office and Project team and UNDP-GEF team (International and national consultants)	USD 60,000	USD 129,900	At least three months before operational closure
Translation of MTR and TE reports into English	UNDP Country Office	USD 5,000	USD 11,650	
TOTAL indicative COST Excluding project team staff time, and UNDP staff and travel expenses		USD 235,931	USD 550,000	

³⁸ The costs of UNDP Country Office and UNDP-GEF Unit's participation and time are charged to the GEF Agency Fee.

VIII. GOVERNANCE AND MANAGEMENT ARRANGEMENTS

235. Roles and responsibilities of the project’s governance mechanism: The project will be implemented following UNDP’s direct implementation modality, according to the Standard Basic Assistance Agreement between UNDP and the Government of Paraguay, and the Country Programme. It is expected that this project will change its implementing modality to NIM after its first year of implementation.

236. The **Implementing Partner** for this project on its first year of implementation will be UNDP. The Implementing Partner is responsible and accountable for managing this project, including the monitoring and evaluation of project interventions, achieving project outcomes, and for the effective use of UNDP resources. Once the implementation modality is changed to NIM, UNDP will act as the responsible party and the Environment Secretariat (SEAM) will lead project implementation on behalf of the Government of Paraguay.

237. The project organisation structure includes: 1) Project Board; 2) Technical Committee (Asuncion Eco-sustainable Task Force); 3) Project Assurance; and 4) Project Management Unit (see Figure 2 below).

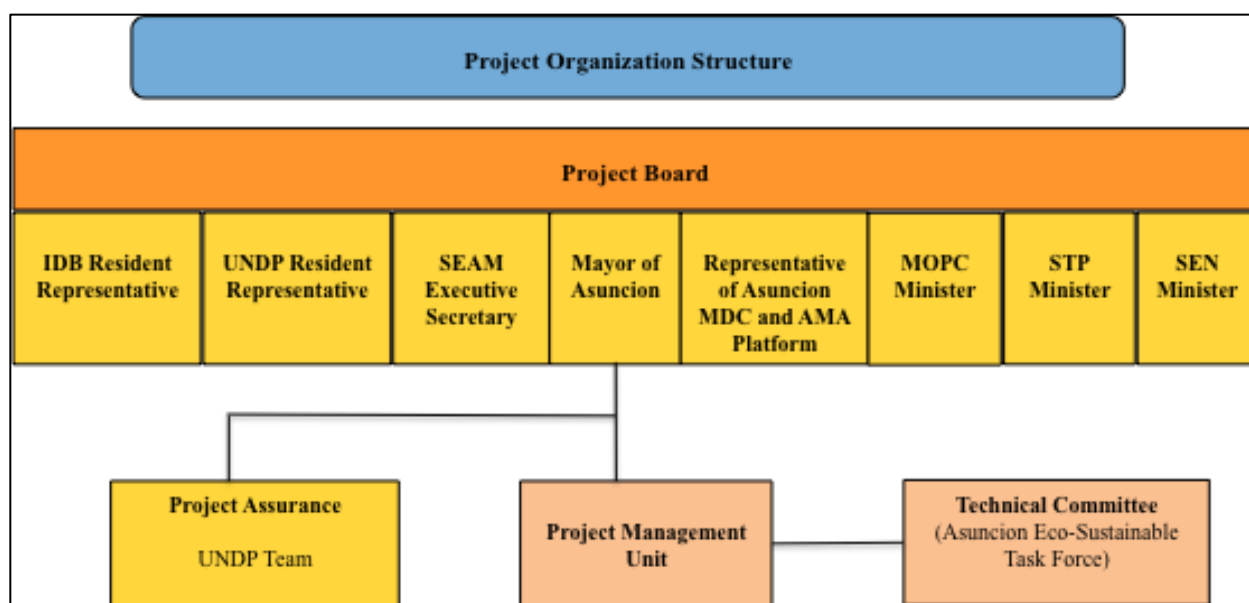


Figure 2. Project Organization Structure

238. The **Project Board** (PB, also called Project Steering Committee) is the highest level of analysis and decision making in regards to programming and achievement of results; and is responsible for making by consensus, management decisions when guidance is required by the Project Coordinator, including recommendation for UNDP/Implementing Partner approval of project plans and revisions. In order to ensure UNDP’s ultimate accountability, Project Board decisions should be made in accordance with standards that shall ensure management for development results, best value money, fairness, integrity, transparency and effective international competition. Preliminary terms of reference for the Project Board are contained in Annex E. In its first meeting the Project Board will prepare and adopt detailed terms of

reference for its functioning. The Project Board is comprised of the following individuals: the Executive Secretary of the SEAM given its roles and responsibilities as the lead national agency in charge of regulating environmental matters and as the GEF operational and political focal point; the UNDP Resident Representative as chair to the group; the IDB Resident Representative considering the current and future Metrobus and ECSI projects; the STP Minister, the MOPC Minister, the SEN Minister, a representative of the Asuncion Municipal Development Council and representative of the Platform of AMA Municipal Development Councils (to be established). It is worth to mention that the Municipal Development Councils are space for citizen participation where the public, private and civil society sectors inter-relate and coordinate, articulate and undertake joint actions to benefit the community.

239. The PB will be convened and supported logistically by the Project Management Unit (PMU, see below) and will meet at least once a year. The PB will provide overall guidance for the project throughout its implementation; specifically, the PB will be responsible for: (i) approving the annual work plan and budget; (ii) achieving coordination among the various government agencies and key stakeholders; (iii) guiding project implementation to ensure alignment with national and local planning processes and sustainable resource use and conservation policies, plans and conservation strategies; (iv) ensuring the participation of key stakeholders in consensus building processes; (v) overseeing the work being carried out by the Project Management Unit and institutional teams; (vi) reviewing key reports (such as PIR); (vii) approved the Terminal Evaluation Report, and (viii) monitoring progress and the effectiveness of project implementation.

240. **Project management:** During the project's initial phase (6-12 months) the project will be executed under the direct implementation modality to ensure impartial consensus-building while the different discussion and decision-making spaces are set up. This implementation modality has been chosen given the scope of the Project, the variety of stakeholders involved (public institutions, municipal governments, private sector, NGOs, civil society organizations involved in waste management, and other sectors and vulnerable groups) and their currently or potentially opposing stances, and finally the above-mentioned comparative advantages; a neutral organism such as UNDP is essential to facilitate the required process of dialogue and consensus when discussing such topics of utmost importance for the development of the AMA. Additionally, UNDP has a wide experience as GEF implementing agency worldwide and in Paraguay with the SEAM and other partners on climate change, biodiversity, chemicals, but also with other funds and partners (STP, SEN, local government, NGOs) on articulation of territorial networks, dialogue platforms and disaster risk reduction. Grants to NGO will be granted in accordance to UNDP Guidance to Micro Capital Grants.

241. Thus, during the initial phase the project will be executed by UNDP in close collaboration and consultation with the SEAM and other members of the Project Board and generic responsibilities outlined below. Once the consensus building mechanisms and fine tuning of institutional roles and responsibilities are agreed upon and confirmed, the Project Board shall define the convenience of changing the execution modality to national implementation (NIM). This change would involve a substantial revision of the project (including a capacity assessment and procedures to be used) to reflect adjustments in implementation arrangements including the definition of roles and responsibilities, and coordination of stakeholders involved in the project's technical and administrative management and the agreement, if any, between the Government of Paraguay and UNDP on the recovery of direct costs following Annex M.

242. During this initial phase, the Project Management Unit (PMU) shall be established within UNDP and under the overall supervision of UNDP, or as may be agreed by the PB. The PMU will consist of a Project Coordinator and a Project Administrator. The Project Coordinator shall run the Project on a day-to-day basis on and his/her prime responsibility shall be to ensure that the project produces the results specified in the project document, to the required standards of quality and within the specified constraints of time and cost. The Project Coordinator will be a person with significant technical experience related to

the scope of the project in addition to strong Project management skills. S(he) will provide overall technical direction for delivery of key outcomes as part of the functions. In addition, S(he) will provide the managerial leadership for the project, working closely with institutions represented in the PB, the Technical Committee and key stakeholders. The successful candidate’s time will be partly dedicated to project management functions and partly to technical advise on project outcomes. The Project Administrator will be stationed in the PMU and will provide support to the Project Coordinator in management and administration of the project as well as provide logical support to technical components of the project.

243. The PMU will be responsible for: (i) ensuring professional and timely implementation of the activities and delivery of the reports and other outputs identified in the project document; (ii) coordination and supervision of the activities outlined in the project document; (iii) undertaking necessary organizational arrangements for all project meetings; (iv) contracting of and contract administration for qualified local and international experts who meet the formal requirements of the UNDP/GEF; (v) manage and be responsible of all financial transactions to realize the targets envisioned in consultation with the Implementing Partner and the other members of the PB; (iv) establishing an effective networking between project stakeholders, specialized international organizations and the donor community; ensure networking among the key stakeholders; (x) review and make recommendations for reports produced under the project; and (x) establish and endorse the thematic areas, with a view to ensuring linkages to national policy goals, relevance, effectiveness and impartiality of the decision making process.

244. The **Project Assurance** role will be provided by the UNDP Country Office specifically by the Sustainable Development Programme Officer – UNDP Paraguay- Additional quality assurance will be provided by the UNDP-GEF Regional Technical Advisor as needed and in accordance with the project cycle management services provided by the UNDP GEF unit.

245. Governance role for project target groups: The Technical Committee, designated, as *Asunción Eco-Sustainable Task Force* shall be composed of representatives from institutions and organizations involved in the achievement of Project outcomes, as generally identified below. During the first six months of project start-up, it is expected that this initial listing be complemented with other institutions, organizations and private sector companies preliminarily contacted during project design such as the Ministry of Women’s Affairs, the National Secretariat of Culture, the Secretariat of Tourism, Itaipu/PTI, other NGOs and Academia.

Project outcomes	Key institutions and organizations
Outcome 1: Enabling framework for a green sustainable city	Municipality of Asuncion; AMA Municipalities, IAPA Consultative Council, SEAM, MOPC, SEN, STP, Sustainable Cities Network, NGOs, private sector companies, academia
Outcome 2: Sustainable mobility and transport in metropolitan Asunción	MOPC; Municipality of Asuncion; SEAM
Outcome 3: Improved Chemicals and Waste management system	Municipality of Asuncion; SEAM; Consorzio Di Bacino
Outcome 4: Emplacing and Improving Protected Area and Urban Green Infrastructure Management	SEAM, Municipality of Asuncion, Guyra Paraguay
Outcome 5: Knowledge management and M&E	UNDP; Municipality of Asuncion; SEAM; MOPC; SEN; STP; Sustainable Cities Network

246. In general, members of the Task Force will provide technical inputs for the achievement of products and/or results in their respective area of work, and will be specifically responsible for ensuring alignment of project activities with institutional mandates as well as for the adequate participation of all key target groups in project activities and project-related decision making processes. The functioning of this Task Force shall be agreed upon during the project's start-up phase, including specific program of work, refined scope of roles and responsibilities, decision-making flow and frequency of meetings.

247. UNDP Direct Project Services: The UNDP, as International Agency for this project, will provide project management cycle services for the project as defined by the GEF Council. In addition, if the Government of Paraguay may request UNDP direct services for specific projects, according to its policies and convenience. The UNDP and Paraguayan Government acknowledge and agree that those services are not mandatory, and will be provided only upon Government request. If requested the services would follow the UNDP policies on the recovery of direct costs. These services (and their costs) are specified in the Agreement (Annex M). As is determined by the GEF Council requirements, these service costs will be assigned as Project Management Cost, identified in the project budget. decisions of the UNDP's Executive Board on the *Policy on Cost Recovery from Regular and Other Resources*, where UNDP shall recover costs for the provision of project related general management services (GMS) and direct project services (DPS). In GEF funded projects, GMS costs are incurred by UNDP in undertaking its Project Cycle Management Services as a GEF IA and are not included in the project budget as they are covered by GEF fees and provided to the UNDP Country Office through UNDP internal distribution. DPS costs are those incurred by UNDP for the provision of services requested by a host Government and that are execution driven and can be traced in full to the delivery of project inputs. They relate to operational and administrative support activities carried out by UNDP offices on behalf of the Direct Implementation Modality (DIM) or Country Office support to National Implementation Modality (NIM) and include the provision of the following estimated services:

- Payments, disbursements and other financial transactions.
- Recruitment of staff, project personnel, and consultants.
- Procurement of services and equipment, including disposal.
- Organization of training activities, conferences, and workshops, including fellowships.
- Travel authorization, visa requests, ticketing, and travel arrangements.
- Shipment, custom clearance, vehicle registration, and accreditation.

248. These execution-related costs are separate and distinct from the GMS costs. In accordance with UNDP policy on cost recovery (2010) and the BOM and UNDP GEF guidance on Direct Project Costs (2012) the costs incurred by UNDP for the provision of direct project services needs to be recovered on the basis of estimated actual costs expected to be incurred or on a per-transaction basis using the Universal price list or Local Price List costing template and should be charged directly to project budgets. The estimated costs are included in the project budget and are funded within the total project management Costs (PMC) allocation provided by GEF to the implementation Parties and cannot exceed the total PMC allocation. Once incurred after each of the above services is provided by UNDP, costs shall be charged against budget code line 74598.

249. Agreement on intellectual property rights and use of logo on the project's deliverables and disclosure of information: In order to accord proper acknowledgement to the GEF for providing grant funding, the GEF logo will appear together with the UNDP logo on all promotional materials, other written materials like publications developed by the project, and project hardware. Any citation on publications regarding projects funded by the GEF will also accord proper acknowledgement to the GEF.

Information will be disclosed in accordance with relevant policies notably the UNDP Disclosure Policy³⁹ and the GEF policy on public involvement⁴⁰.

IX. FINANCIAL PLANNING AND MANAGEMENT

250. The total cost of the project is USD 247,833,120. This is financed through a GEF grant of USD 7,493,120 and USD 240,340,000 in parallel co-financing. UNDP, as the GEF Implementing Agency, is responsible for the execution of the GEF resources and the cash co-financing transferred to UNDP bank account only.

251. Parallel co-financing: The actual realization of project co-financing will be monitored during the mid-term review and terminal evaluation process and will be reported to the GEF. The planned parallel co-financing will be used as follows:

³⁹ See http://www.undp.org/content/undp/en/home/operations/transparency/information_disclosurepolicy/

⁴⁰ See https://www.thegef.org/gef/policies_guidelines

Table 7. Parallel Co-financing

Co-financing source	Co-financing type	Co-financing amount USD	Planned Activities/Outputs	Risks	Risk Mitigation Measures
National Government SEAM	Grant	2,848,600	Cost of Staff assigned to project activities; office services (electricity, communication); maintenance and operation of vehicles & equipment; office supplies; development & maintenance of project information & MRV systems	Low risk since costs are annually budgeted	The UNDP CO will monitor the co-financing contributions to the project.
	In-kind	117,900	Office space & equipment, vehicle	Low risk	
Municipal Government Municipality of Asuncion	Grant	4,278,600	Cost of staff assigned to project activities; office services (electricity, communication) & supplies; maintenance and operation of vehicles & equipment; construction of bicycle lanes;	Low risk since costs are annually budgeted	The UNDP CO will monitor the co-financing contributions to the project.
		1,000,000	Construction of bicycle lanes Development & maintenance of project information & MRV systems	High risk. Although bicycle lane ordinance stipulates allocation of 1% of tax property to construction; it depends on effective allocation in annual budget. MRV systems also dependent on budget allocations.	
	In-kind	1,473,000	Office space & equipment, vehicle; JBA facilities & tree nursery. Cost of land property where the separation and recycling pilot facilities will be established.	Low risk	
National Government MOPC	Grant	226,578,500	Cost of staff assigned to project activities; office services (electricity, communication) & supplies; maintenance and operation of vehicles & equipment; construction of Metrobus; bus stop signs/paintings and shelters; bus fleet renovation program; PQM facilities & services; construction of the information center in PQM; infrastructure & equipment RBSMBA; habitat restoration in RBSMBA	Low risk since costs are annually budgeted. Construction of the Metrobus is funded through an IDB loan	The UNDP CO will monitor the co-financing contributions to the project.
		950,000	Construction of information center in PQM; infrastructure & equipment RBSMBA; habitat restoration in RBSMBA; bus renovation program; development & maintenance of project information & MRV systems;	High risk. Depends on inclusion of costs in annual budget and effective allocation of funds	

Co-financing source	Co-financing type	Co-financing amount USD	Planned Activities/Outputs	Risks	Risk Mitigation Measures
	In-kind	307,000	Office space & equipment, vehicle	Low risk	
National Government STP	Grant	1,318,600	Cost of staff assigned to project activities; office services (electricity, communication) & supplies; maintenance and operation of vehicles & equipment Development & maintenance of project information & MRV systems;	Low risk since costs are annually budgeted High risk. Depends on inclusion of costs in annual budget and effective allocation of funds	The UNDP CO will monitor the co-financing contributions to the project.
	In-kind	57,000	Office space & equipment, vehicle	Low risk	
National Government SEN	Grant	417,600	Cost of staff assigned to project activities; office services (electricity, communication) & supplies; maintenance and operation of vehicles & equipment; development & maintenance of project information & MRV systems Development & maintenance of project information & MRV systems;	Low risk since costs are annually budgeted High risk. Depends on inclusion of costs in annual budget and effective allocation of funds	The UNDP CO will monitor the co-financing contributions to the project.
	In-kind	57,000	Office space & equipment, vehicle	Low risk	
NGO Paraguayan Sustainable Cities Network	Grant	258,600	Cost of staff assigned to project activities; office services (electricity, communication) & supplies; maintenance and operation of vehicles & equipment; development & maintenance of project information & MRV systems	Medium risk: funding dependent on availability of donor funds	The UNDP CO will monitor the co-financing contributions to the project.
	In-kind	57,000	Office space & equipment, vehicle	Low risk	
NGO Guyra Paraguay	Grant	213,600	Cost of staff for bird census & surveys; office services (electricity, communication) & supplies; maintenance and operation of vehicles & equipment: Asuncion Bay cleanup campaigns	Medium risk: funding dependent on availability of donor funded projects	The UNDP CO will monitor the co-financing contributions to the project.
	In-kind	107,000	Office space & equipment, vehicle; GIS laboratory; Viñas Cue Biocenter facilities	Low risk	

Co-financing source	Co-financing type	Co-financing amount USD	Planned Activities/Outputs	Risks	Risk Mitigation Measures
GEF Agency UNDP	Grant	300,000	Cost of office services (electricity, communication) & supplies; maintenance and operation of vehicles & equipment for development of DRR plan/early warning mechanism, capacity strengthening on climate change issues. Cost of staff for press and communication activities, and review/editing of project publications.	Low risk	
Total		240,340,000			

252. Budget Revision and Tolerance: As per UNDP requirements outlined in the UNDP POPP, the project board will agree on a budget tolerance level for each plan under the overall annual work plan allowing the project coordinator to expend up to the tolerance level beyond the approved project budget amount for the year without requiring a revision from the Project Board. Should the following deviations occur, the Project Coordinator and UNDP Country Office will seek the approval of the UNDP-GEF team as these are considered major amendments by the GEF:

- a) Budget re-allocations among components in the project with amounts involving 10% of the total project grant or more;
- b) Introduction of new budget items/or components that exceed 5% of original GEF allocation.

253. Any over expenditure incurred beyond the available GEF grant amount will be absorbed by non-GEF resources (e.g. UNDP TRAC or cash co-financing).

254. Refund to Donor: Should a refund of unspent funds to the GEF be necessary, this will be managed directly by the UNDP-GEF Unit in New York.

255. Project Closure: Project closure will be conducted as per UNDP requirements outlined in the UNDP POPP. On an exceptional basis only, a no-cost extension beyond the initial duration of the project will be sought from in-country UNDP colleagues and then the UNDP-GEF Executive Coordinator.

256. Operational completion: The project will be operationally completed when the last UNDP-financed inputs have been provided and the related activities have been completed. This includes the final clearance of the Terminal Evaluation Report (that will be available in English) and the corresponding management response, and the end-of-project review Project Board meeting. The Implementing Partner through a Project Board decision will notify the UNDP Country Office when operational closure has been completed. At this time, the relevant parties will have already agreed and confirmed in writing on the arrangements for the disposal of any equipment that is still the property of UNDP.

257. Financial completion: The project will be financially closed when the following conditions have been met:

- a) The project is operationally completed or has been cancelled;
- b) The Implementing Partner has reported all financial transactions to UNDP;
- c) UNDP has closed the accounts for the project;
- d) UNDP and the Implementing Partner have certified a final Combined Delivery Report (which serves as final budget revision).

258. The project will be financially completed within 12 months of operational closure or after the date of cancellation. Between operational and financial closure, the implementing partner will identify and settle all financial obligations and prepare a final expenditure report. The UNDP Country Office will send the final signed closure documents including confirmation of final cumulative expenditure and unspent balance to the UNDP-GEF Unit for confirmation before the project will be financially closed in Atlas by the UNDP Country Office.

X. TOTAL BUDGET AND WORK PLAN

TOTAL BUDGET AND WORK PLAN			
Atlas Proposal or Award Id:	00096984	Atlas Primary Output Project ID:	00100857
Atlas Proposal or Award Title:	Asuncion Sustentable		
Atlas Business Unit	PRY10		
Atlas Primary Output Project Title	Asuncion Green City of the Americas, Pathways to Sustainability		
UNDP-GEF PIMS No.	5188		
Implementing Partner :	UNDP		

GEF Component/Atlas Activity	Responsible Party (Atlas Implementing Agent)	Fund ID	Donor Name	Atlas Budgetary Account Code	ATLAS Budget Description	Amount Year 1 (USD)	Amount Year 2 (USD)	Amount Year 3 (USD)	Amount Year 4 (USD)	Amount Year 5 (USD)	Total (USD)	See Budget Note:
OUTCOME 1 Enabling framework for a green sustainable city enhances integrated urban planning of the AMA	UNDP	62000	GEF	71200	International Consultants	165,000	30,000	20,000	120,000	10,000	345,000	1
				71300	Local Consultants	122,316	148,315	39,315	124,315	9,315	443,576	2
				71400	Contractual Services - Individ	41,824	41,823	41,823	41,823	41,823	209,116	3
				71600	Travel	-	20,000	30,000	-	10,000	60,000	4
				72100	Contractual Services-Companies	141,500	128,500	78,500	18,000	18,000	384,500	5
				72200	Equipment and Furniture	50,000	120,000	60,000	38,000	10,000	278,000	6
				72300	Materials & Goods	9,063	9,063	9,063	9,064	9,064	45,317	7
				72500	Supplies	-	2,500	2,500	2,500	2,500	10,000	8
				72600	Grants	90,000	50,000	50,000	-	-	190,000	9
				72800	Information Technology Equipmt	5,000	7,000	-	5,000	-	17,000	10
				74200	Audio Visual & Print Prod Costs	5,800	14,812	10,800	15,800	15,800	63,012	11
				75700	Training, Workshops and Confer	79,000	137,500	152,500	72,500	62,500	504,000	12
					Total Outcome 1	709,503	709,513	494,501	477,002	189,002	2,549,521	

GEF Component/Atlas Activity	Responsible Party (Atlas Implementing Agent)	Fund ID	Donor Name	Atlas Budgetary Account Code	ATLAS Budget Description	Amount Year 1 (USD)	Amount Year 2 (USD)	Amount Year 3 (USD)	Amount Year 4 (USD)	Amount Year 5 (USD)	Total (USD)	See Budget Note:
OUTCOME 2 Sustainable mobility and transport in metropolitan Asunción for reducing GHG emissions from urban transport	UNDP	62000	GEF	71200	International Consultants	20,000	55,000	25,000	40,000	-	140,000	13
				71300	Local Consultants	-	-	20,000	-	-	20,000	14
				71400	Contractual Services - Individ	36,948	36,948	36,949	36,949	36,949	184,743	15
				72100	Contractual Services-Companies	57,069	1,016,570	40,000	40,000	-	1,153,639	16
						Total Outcome 2	114,017	1,108,518	121,949	116,949	36,949	1,498,382
OUTCOME 3 Improved chemicals and waste management system for reducing emissions of UOPs, GHGs and toxic chemicals	UNDP	62000	GEF	71200	International Consultants	30,000	30,000	20,000	10,000	10,000	100,000	17
				71300	Local Consultants	10,000	-	-	-	-	10,000	18
				71400	Contractual Services - Individ	37,623	37,623	37,623	37,623	37,623	188,115	19
				72100	Contractual Services-Companies	151,784	234,924	200,000	145,000	125,000	856,708	20
				72200	Equipment and Furniture	-	180,000	100,000	50,000	50,000	380,000	21
				72300	Materials & Goods	-	7,500	7,500	7,500	7,500	30,000	22
				72500	Supplies	-	4,000	4,000	4,000	8,000	20,000	23
				72800	Information Technology Equipmt	6,000	6,000	-	-	-	12,000	24
				74200	Audio Visual & Print Prod Costs	4,500	8,994	4,494	4,493	4,493	26,974	25
		75700	Training, Workshops and Confer	10,000	10,000	-	-	-	20,000	26		
				Total Outcome 3	249,907	519,041	373,617	258,616	242,616	1,643,797		
OUTCOME 4 Emplacing and improving Protected Area management	UNDP	62000	GEF	71300	Local Consultants	13,000	73,000	-	-	-	86,000	27
				71600	Travel	4,000	4,000	4,000	4,000	-	16,000	28
				71400	Contractual Services - Individ	35,605	35,605	35,605	35,605	35,606	178,026	29
				72100	Contractual Services-Companies	33,635	138,000	90,000	33,000	18,000	312,635	30
				72200	Equipment and Furniture	5,000	20,000	30,000	15,000	-	70,000	31
				72300	Materials & Goods	800	800	800	800	800	4,000	32
				72500	Supplies	5,000	15,000	10,000	5,000	5,000	40,000	33

GEF Component/Atlas Activity	Responsible Party (Atlas Implementing Agent)	Fund ID	Donor Name	Atlas Budgetary Account Code	ATLAS Budget Description	Amount Year 1 (USD)	Amount Year 2 (USD)	Amount Year 3 (USD)	Amount Year 4 (USD)	Amount Year 5 (USD)	Total (USD)	See Budget Note:
				72600	Grants	50,000	40,000	40,000	30,000	20,000	180,000	34
				72800	Information Technology Equipmt	-	7,500	7,500	-	-	15,000	35
				74200	Audio Visual & Print Prod Costs	5,000	44,000	61,000	7,000	-	117,000	36
				75700	Training, Workshops and Confer	26,800	53,800	42,800	36,800	29,813	190,013	37
					Total Outcome 4	178,840	431,705	321,705	167,205	109,219	1,208,674	
OUTCOME 5 Dissemination of Lessons-learned, monitoring & evaluation	UNDP	62000	GEF	71200	International Consultants	-	-	30,000	-	40,000	70,000	38
				71300	Local Consultants	4,000	4,000	19,000	4,000	24,000	55,000	39
				74100	Professional Services	2,000	2,000	4,500	2,000	4,500	15,000	40
				74200	Audio Visual & Print Prod Costs	-	18,733	18,733	18,733	18,732	74,931	41
				75700	Training, Workshops and Confer	13,000	2,000	2,000	2,000	2,000	21,000	42
	Total Outcome 5	19,000	26,733	74,233	26,733	89,232	235,931					
PROJECT MANAGEMENT UNIT	UNDP	62000	GEF	71400	Contractual Services - Individ	31,000	31,000	31,000	31,000	31,000	155,000	43
				72200	Equipment and Furniture	4,000	-	-	-	-	4,000	44
				72400	Communic & Audio Visual Equip	300	300	300	300	300	1,500	45
				72500	Supplies	500	500	500	500	500	2,500	46
				72800	Information Technology Equipmt	4,700	-	-	-	-	4,700	47
				73100	Rental & Maintenance-Premises	8,400	8,400	8,400	8,400	8,400	42,000	48
				74500	Miscellaneous Expenses	500	500	500	500	500	2,500	49
				74598	UNDP Direct Project Costs	28,923	28,923	28,923	28,923	28,923	144,615	50
	Total Project Management	78,323	69,623	69,623	69,623	69,623	356,815					
PROJECT TOTAL						1,349,590	2,865,133	1,455,628	1,086,128	736,641	7,493,120	

Summary of Funds:

	Amount Year 1	Amount Year 2	Amount Year 3	Amount Year 4	Amount Year 5	Total
GEF	1,309,590	2,845,133	1,485,628	1,116,128	736,641	7,493,120
SEAM	422,000	1,387,000	392,000	392,000	373,500	2,966,500
MOPC	39,425,520	75,053,520	63,091,520	43,893,520	6,371,420	227,835,500
Municipality of Asuncion	958,520	1,418,520	1,708,520	1,508,520	1,157,520	6,751,600
STP	255,120	280,120	280,120	280,120	280,120	1,375,600
SEN	98,120	94,120	94,120	94,120	94,120	474,600
Paraguayan Sustainable Cities Network	63,120	63,120	63,120	63,120	63,120	315,600
Guyra Paraguay	62,120	67,120	67,120	67,120	57,120	320,600
UNDP	60,000	60,000	60,000	60,000	60,000	300,000
TOTAL	42,654,110	81,268,653	67,242,148	47,474,648	9,193,561	247,833,120

Budget Notes:

No.	Budget note
Outcome 1: Enabling framework for a green sustainable city enhances integrated urban planning of the AMA	
1	<p>International Consultants:</p> <ul style="list-style-type: none"> Propose methodology, tools and processes for developing urban land use and sustainable development plans, with gender approach (Output 1.1) Propose methodology, tools and processes for developing transport, solid waste and chemicals, and green corridor plans under the land use/sustainable development plans (Output 1.1) Provide advice and methodology for elaboration of a NAMA guideline and recognition of BRT as a NAMA (Output 1.2) Technical assistance and advice in developing hazardous substances inventory, safeguards for Cateura dumpsite and inter-municipal agreement and management plan (Output 1.4) Technical advice, guidance and methodology for functioning of municipal development councils and the platform of municipal development councils (Output 1.5)
2	<p>Local Consultants:</p> <ul style="list-style-type: none"> Development of urban land use and sustainability plans, and particularly sustainable transport plan and transport oriented development solid waste and chemicals management plan, green corridor action plan, with gender considerations (Output 1.1) Development of municipal tax collection strategy (Output 1.2) Review of PES legal framework, development of proposals for regulations and strategies for urban PES (Output 1.2) Design of communication plan (Output 1.3) Institutional assessments to identify DRR capacities and adapt DRR tools; development of training plans for DRR; risk scenarios; design of DRR plan and early warning mechanism (Output 1.6) <p>Note: All products incorporating gender considerations and including analysis bases on sex-disaggregated data.</p>
3	Service contracts to support inter-institutional planning/coordination/dialogue on urban development themes and project management for Outcome 1. Includes a full time urban planning specialist, and part of Project Coordinator and Project Administrator time devoted to provide advice to the participating institutions.
4	International exchange visits for authorities and technicians of partner institutions on urban land use, sustainable development (Output 1.1) and DRR (Output 1.6) with other pilot cities participating in the IAP program or other cities.
5	<p>Contracts:</p> <ul style="list-style-type: none"> Studies and maps in support of urban land use and sustainable development plans (Output 1.1) Development of training programs for a sustainable city for authorities and technicians (Output 1.3) Design of a training program for gender mainstreaming in urban planning (Output 1.3) Elaboration of hazardous substances inventory, design of a hazardous waste confinement site, inter-municipal management plan, elaboration of a technical guide for inspection of hazardous wastes (Output 1.4) Design of a mobility and connectivity survey (Output 1.4) Assessment on construction of masculinities in the AMA, action plan and protocols in support of citizenship building and platform of municipal councils (Output 1.5) Develop the methodology and processes for implementation of the Sustainable City Monitoring Platform (Output 1.7)

No.	Budget note
6	Equipment: <ul style="list-style-type: none"> • Hydro-meteorological stations to strengthen the early warning network covering at least 50% of AMA area (Output 1.6) • MRV system and monitoring of GHG emissions, air quality, water, and other indicators (Output 1.7)
7	Transport expenses (fuel, vehicle maintenance) for counterpart staff supporting activities related to achievement of Outcome 1.
8	Office supplies (for offices and workshops)
9	Grant to the NGO Red de Ciudades Sustentables del Paraguay, for the installing the urban sustainability monitoring platform (based on UNDP's policy for the Engagement of NGOs and CSOs as Responsible Parties and based on a capacity assessment). Grants to NGO's will be granted in accordance to UNDP Guidance on Micro-Capital Grants
10	Computer equipment for the information and knowledge system (Output 1.3)
11	Publications: <ul style="list-style-type: none"> • Urban land use and sustainable development plans (Output 1.1) • Guide to management and inspection of hazardous wastes (Output 1.4) • DRR plan and DRR visibility and awareness raising materials (Output 1.6)
12	Training, workshops and conferences: <ul style="list-style-type: none"> • Participatory workshops for development of urban land use and sustainable development plans (Output 1.1) • Participatory workshops for development (Output 1.2) • Training events on sustainable cities, including participation in IAP program trainings (Output 1.3) • Trainings for certification of bus drivers and analysis of transport related data (Output 1.3) • Training for management and inspection of hazardous substances (Output 1.3) • Municipal councils' platform workshops and meetings (Output 1.5) • Participatory workshops for development of DRR plans and early warning mechanism; and trainings on DRR and early warning (Output 1.6)
Outcome 2: Sustainable mobility and transport in metropolitan Asunción for reducing GHG emissions from urban transport	
13	International consultants: <ul style="list-style-type: none"> • Identification and design of traffic management pilots (Output 2.2) • Re-design of bus routes affected by the Metrobus (Output 2.3) • Development of air quality standards and guide to vehicle maintenance (Output 2.4) • Development of a plan for removal and scrapping of old buses (Output 2.4)
14	National consultants: <ul style="list-style-type: none"> • Re-design of bus routes affected by the Metrobus, taking into account differentiated uses and needs (Output 2.3) • Drafting of contracts between MOPC and bus companies for implementation of new routes (Output 2.4)
15	Service contracts to support inter-institutional planning/coordination/dialogue on sustainable transport themes and project management for Outcome 2. Includes a full time sustainable transport specialist, and part of Project Coordinator and Project Administrator time devoted to provide advice to the participating institutions
16	Contracts: <ul style="list-style-type: none"> • Design of a protocol for construction and maintenance standards of bicycle lanes, with gender approach (Output 2.1) • Construction of 30 kms of bicycle lanes with gender considerations (Output 2.1) • Implementation of traffic management pilots (Output 2.2) • Pilot monitoring of public transport emissions (identification of bus lines, installation of monitoring devices, data collection (Output 2.2) • Development of a web-based information platform for traffic management (Output 2.2) • Design and construction of 30 eco-sustainable bus stop shelters, with gender considerations (Output 2.3)
Outcome 3: Improved chemicals and waste management system for reducing emissions of UPOPs, GHGs and toxic chemicals	
17	International consultants to provide technical assistance in: <ul style="list-style-type: none"> • Developing TORs for design of cleanup pilot in RBSMBA and support supervision of implementation (Output 3.1) • Developing TORs for design and implementation of collection-separation pilot (Output 3.2) • Developing TORs for cost-benefit analysis of recycling, and design of trainings (Output 3.3) • Developing TORs for establishing recycling plant and supervision of activities (Output 3.3)
18	National consultant for training on solid waste management and recycling under the recycling pilot, and activities to guarantee access of women to the processes (e.g. child care, awareness raising) (Output 3.3)
19	Service contracts for technical specialists to support inter-institutional planning/coordination/dialogue of solid waste management themes and project management for Outcome 3, ensuring gender mainstreaming. Includes a full time solid waste management specialist, and part of Project Coordinator and Project Administrator time devoted to provide advice to the participating institutions
20	Contracts: <ul style="list-style-type: none"> • Feasibility study for alternative #4 of the solid waste master plan (Output 3.1)

No.	Budget note
	<ul style="list-style-type: none"> • Characterization of wastes in the RBSMBA (quantity and composition) (Output 3.1) • Implementation of cleanup pilot and surveillance in RBSMBA (Output 3.1) • Development of the web-based information system on segregated materials, e-wastes and tires, and training of operators (Output 3.2) • Implementation of collection-separation pilot (Output 3.2) • Cost-benefit analysis of interventions and 6 business plans (Output 3.3) • Implementation of recycling pilot (Output 3.3) <p>Note: contracts will include gender related activities e.g. training for tour guides, activities with women in relation to traditional knowledge and environmental conservation, equal participation in specialized and common tasks.</p>
21	Equipment for collection-separation pilot (chutes, conveyor belts, sorters, compactor) under Output 3.2 and recycling pilot (chutes, conveyor belts, shears, plastic crusher, sorting tables) under Output 3.3.
22	Services for operation of collection and recycling pilots (fuel, water, electricity and maintenance of equipment) under Outputs 3.2 and 3.3
23	Supplies for collection and recycling pilots (office supplies, protection gear e.g gloves, masks) under Outputs 3.2 and 3.3
24	Computer equipment for keeping records in collection and recycling pilots (Outputs 3.2 and 3.3)
25	Information materials to inform and raise awareness of communities on the collection and recycling initiatives (Outputs 3.2 and 3.3)
26	Training of cleanup brigades in the RBSMBA (Output 3.1) and recycling pilot personnel (Output 3.3)
Outcome 4: Emplacing and improving Protected Area management	
27	<p>National consultants:</p> <ul style="list-style-type: none"> • Finalization of the RBSMBA management plan (Output 4.1) • Development of financial plan for RBSMBA (Output 4.1) • Design of environmental interpretation plan and interpretation center for RBSMBA (Output 4.1) • Development of financial plan for JBA and business plan for PQM (Output 4.2) • Design of the information center in PQM (Output 4.2)
28	Participation of technicians and park rangers in international courses on urban protected area management and sustainability (Output 4.1)
29	Service contracts for technical specialists to support inter-institutional planning/coordination/dialogue of green areas management and biodiversity conservation themes and project management under Outcome 4. Includes a full time protected area/green areas specialist, and part of Project Coordinator and Project Administrator time devoted to provide advice to the participating institutions
30	<p>Contracts:</p> <ul style="list-style-type: none"> • Asuncion bay cleanup campaigns (Output 4.1) • Restoration of bird habitats in RBMSBA (Output 4.1) • Infrastructure in RBMSBA (observation towers and interpretation infrastructure for visitor area, restricted and scientific uses) (Output 4.1) • Environmental protection signage/information signs RBSMBA (Output 4.1) • Updating of JBA management plan (Output 4.2) • Elaboration of PQM management plan (Output 4.2) • Updating of Natural History Museum project costs (Output 4.2) • Annual bird inventories in the green corridor (Output 4.3) • Information signs for the green corridor (Output 4.3)
31	Equipment for RBSMBA (Output 4.1): a) observation and monitoring of birds and fauna; b) office furniture; c) photocopier; d) communication system; e) photo-camera; f) drone for monitoring of wetlands and urban pressures; g) four-wheeler ATV for monitoring and cleanup; h) museum modules.
32	Goods and materials: fuel for monitoring of the green corridor and Asuncion Bay (Output 4.3)
33	Supplies: inputs for Asuncion Bay cleanup campaigns: bags; cleanup tools; identification tags (Output 4.1)
34	Grant to the NGO Guyra Paraguay, for finalizing the RBSMBA management plan and the migratory bird census (based on UNDP's policy for the Engagement of NGOs and CSOs as Responsible Parties and based on a capacity assessment). Grants to NGO's will be granted in accordance to UNDP Guidance on Micro-Capital Grants
35	Computer equipment for the RBSMBA: desktop and notebook computers (Output 4.1)
36	Publications: a) RBSMBA management plan and information materials (Output 4.1), b) JBA, PQM management plans and information materials (Output 4.2); c) Green corridor information materials, audiovisual, bird guide, management guidelines, environmental education manual (Output 4.3)
37	Training: a) Training workshops for RBSMBA park rangers (Output 4.1); b) Inter-institutional meetings for establishment of the RBSMBA management committee (Output 4.1); c) Inter-institutional meetings for institutionalization of green corridor (Output 4.3); d) "Birds in Paraguayan Music" concerts; awareness raising on the green corridor (public presentations, awareness raising events, exhibition stands including activities with women) (Output 4.3).
Outcome 5: Dissemination of Lessons-learned, monitoring & evaluation	
38	International consultants for mid-term review and final evaluation (Output 5.2)

No.	Budget note
39	National consultants: <ul style="list-style-type: none"> • Completion of tracking tools; monitoring of indicators (Output 5.1) • Support to mid-term review and final evaluation (Output 5.2)
40	Publication and dissemination of best practices and lessons learned (Output 5.3)
41	Professional services for translation of mid-term review and final evaluation reports (Output 5.2) and annual audits (Output 5.1)
42	Inception workshop and annual planning workshops (Output 5.1)
Project Management Unit	
43	Service contracts for Project Coordinator and Project Administrator
44	Rental and maintenance of office for the Project Management Unit
45	Miscellaneous expenses
46	Computer equipment for Project Coordinator and Project Administrator
47	Office equipment and furniture for Project Management Unit
48	Communication expenses
49	Office supplies for Project Management Unit
50	UNDP cost recovery charges. Direct Project costs for services provided for staff selection and recruitment processes, HR and benefits management, administration of payroll, consultant recruitment processes, procurement not involving local CAP, all payments and others. The total and maximum estimated amount of USD 144.615 is an estimated amount to be adjusted according to actual process.

XI. LEGAL CONTEXT

259. This project document shall be the instrument referred to as such in Article 1 of the Standard Basic Assistance Agreement between the Government of Paraguay and the United Nations Development Programme, signed on June 7th, 1978. All references in the SBAA to “Executing Agency” shall be deemed to refer to “Implementing Partner”.

260. UNDP as the Implementing Partner shall comply with the policies, procedures and practices of the United Nations Security Management System (UNSMS.)

261. UNDP agrees to undertake all reasonable efforts to ensure that none of the UNDP funds received pursuant to the Project Document are used to provide support to individuals or entities associated with terrorism and that the recipients of any amounts provided by UNDP hereunder do not appear on the list maintained by the Security Council Committee established pursuant to resolution 1267 (1999). The list can be accessed via http://www.un.org/sc/committees/1267/aq_sanctions_list.shtml. This provision must be included in all sub-contracts or sub-agreements entered into under this Project Document.

262. Consistent with UNDP’s Programme and Operations Policies and Procedures, social and environmental sustainability will be enhanced through application of the UNDP Social and Environmental Standards (<http://www.undp.org/ses>) and related Accountability Mechanism (<http://www.undp.org/secu-srm>).

263. The Implementing Partner shall: (a) conduct project and programme-related activities in a manner consistent with the UNDP Social and Environmental Standards, (b) implement any management or mitigation plan prepared for the project or programme to comply with such standards, and (c) engage in a constructive and timely manner to address any concerns and complaints raised through the Accountability Mechanism. UNDP will seek to ensure that communities and other project stakeholders are informed of and have access to the Accountability Mechanism.

264. All signatories to the Project Document shall cooperate in good faith with any exercise to evaluate any programme or project-related commitments or compliance with the UNDP Social and Environmental Standards. This includes providing access to project sites, relevant personnel, information, and documentation.

265. The UNDP Resident Representative in Paraguay is authorized to effect in writing the following types of revision to this Project Document, provided that he/she has verified the agreement thereto by the UNDP-GEF Unit and is assured that the other signatories to the Project Document have no objection to the proposed changes:

- a) Revision of, or addition to, any of the annexes to the Project Document;
- b) Revisions which do not involve significant changes in the immediate objectives, outputs or activities of the project, but are caused by the rearrangement of the inputs already agreed to or by cost increases due to inflation;
- c) Mandatory annual revisions which re-phase the delivery of agreed project inputs or increased expert or other costs due to inflation or take into account agency expenditure flexibility; and
- d) Inclusion of additional annexes and attachments only as set out here in this Project Document..

XII. MANDATORY ANNEXES

- A. Multi year Workplan
- B. Monitoring Plan
- C. Evaluation Plan
- D. GEF Tracking Tool (s) at baseline
- E. Terms of Reference Project Management Unit and Project Board
- F. UNDP Social and Environmental and Social Screening Template (SESP)
- G. UNDP Project Quality Assurance Report
- H. Results of the capacity assessments of SEAM, MOPC and Municipality of Asuncion
- I. Biodiversity in Asuncion, proposed Green Corridor and Protected Areas to be strengthened
- J. Training plan
- K. Description of solid waste management pilot interventions
- L. Maps
- M. Letter of Agreement with the Government of Paraguay and Description of UNDP Country Office Support Services.
- N. GHG Emission Reduction Calculations.

Annex A: Multi Year Work Plan

Task	Responsible Party	Year 1				Year 2				Year 3				Year 4				Year 5			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
<i>Output 1.1: Asunción Metropolitan Area (AMA) Land Use Plan and Sustainable Development Plan covering multiple sector</i>																					
1.1.1 Elaborate action plan, methodologies for LUP/SDPs and Asuncion LUP/SDP	Project Management Unit (PMU); STP; SEAM; municipalities	X	X	X	X	X	X	X	X												
1.1.2 Elaborate LUP/SDPs of 5 municipalities										X	X	X	X								
1.1.3 Elaborate LUP/SDPs of 5 new municipalities														X	X	X	X				
1.1.4 AMA LUP/SDP integrating individual LUP/SDPs	PMU; Municipalities ; STP; SEAM																	X	X	X	X
<i>Output 1.2: Sustainable city financial strategy for increased allocation of funds and sustainable investments in transport, solid waste management and chemicals, and protected areas/green areas for biodiversity conservation</i>																					
1.2.1 Develop tax collection improvement strategy	PMU; MA.; 10 municipalities	X	X	X	X	X	X	X	X	X	X	X	X								
1.2.2 Develop mechanisms for PES	PMU; SEAM; MA	X	X	X	X	X	X	X	X	X	X	X	X								
1.2.3 Promote recognition of Metrobus as NAMA	PMU; SEAM; MOPC; MA	X	X	X	X	X	X	X	X												
1.2.4 Promote public-private partnerships	PMU; MA	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
1.2.5 Develop land value capture mechanism	PMU; municipalities	X	X	X	X																
<i>Output 1.3: Institutional capacity development program for integrated urban planning</i>																					
1.3.1 Develop training program	PMU; SEAM; STP; MA	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
1.3.2 Develop Sustainable City Information and Knowledge system	PMU; MA; SEAM; STP	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
1.3.3 Develop communication plan	PMU; MA; STP; SEAM	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
<i>Output 1.4 Policy and regulatory adjustments to improve integrated urban planning</i>																					
1.4.1 Mobility and connectivity survey in AMA	PMU; MOPC; MA	X	X	X	X																
1.4.2 Baseline assessment on hazardous substances	PMU; SEAM	X	X	X	X	X	X	X	X												
1.4.3 Regulations and guidelines for hazardous waste management	PMU; SEAM; municipalities					X	X	X	X	X	X	X	X								
1.4.4 Guidelines for	PMU; SEAM;					X	X	X	X	X	X	X	X								

Task	Responsible Party	Year 1				Year 2				Year 3				Year 4				Year 5			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
inspection of hazardous wastes	municipalities																				
1.4.5 Guidelines and safeguards for Cateura closure	PMU; SEAM; MA					X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
<i>Output 1.5 Inter-institutional and inter-sectorial dialogue and participation mechanisms for integrated urban planning</i>																					
1.5.1 Create and strengthen IAPA. Functioning of IAPA	PMU; MA	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
1.5.2 Support functioning of Asuncion Development Council	PMU; MA; IAPA; Sustainable Cities Network	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
1.5.3 Establish Platform of Municipal Development Councils. Functioning of platform	PMU; STP	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
<i>Output 1.6 Disaster risk management plan and early warning mechanism for the AMA</i>																					
1.6.1 Develop DRR plan for AMA	PMU; SEN; DMH; municipalities	X	X	X	X	X	X	X	X	X											
1.6.2 Develop early warning mechanism for AMA	PMU; SEN; DMH; municipalities					X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
1.6.3 Capacity building of local DRR	PMU; SEN; municipalities	X	X	X	X	X	X	X	X	X	X	X	X								
<i>Output 1.7: Monitoring and control system (MRV) for a sustainable city</i>																					
1.7.1 Develop monitoring platform	PMU; SEAM; STP; MA; Sustainable Cities Network	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
<i>Output 2.1: Multi-modal transport measures for the AMA in line with the Metrobus project</i>																					
2.1.1 Design and construction protocol of dedicated urban bicycle paths and parking/transfer facilities in Asunción	PMU; MA; Metrobus project	X	X	X	X																
2.1.2 Construction and maintenance of 100 km of dedicated urban bicycle paths	PMU; MA; Metrobus project					X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
<i>Output 2.2: Traffic management measures to improve traffic management in the AMA</i>																					
2.2.1: Implement pilot traffic	PMU; MA;					X	X	X	X					X	X	X	X				

Task	Responsible Party	Year 1				Year 2				Year 3				Year 4				Year 5			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
management measures	MOPC																				
2.2.2 Pilot monitoring of public transport	PMU; MOPC/VMT				X	X	X	X	X												
2.2.3 Develop information platform	PMU; STP; MOPC/VMT; Metrobus project; MA	X	X	X	X	X	X	X	X												
<i>Output 2.3 Optimum bus routing and bus stop shelters to complement the Metrobus</i>																					
2.3.1 Restructure bus routes	PMU; MOPC/VMT; Metrobus project; Municipalities								X	X	X	X	X	X	X	X					
2.3.2 Pilot eco-sustainable bus stop shelters	PMU; MOPC/VMT; MA		X	X	X	X	X	X	X	X	X	X	X	X							
2.3.3 Contracts with bus companies to implement new routes	PMU; MOPC/VMT											X	X	X	X	X					
<i>Output 2.4 Standards for public transport vehicles' emissions, maintenance and scrapping</i>																					
2.4.1 Develop vehicle regulations on emissions, maintenance and scrapping standards	PMU; SEAM	X	X	X	X	X	X														
2.4.2 Develop program for removal of obsolete vehicles/voluntary certification	PMU; MOPC/VMT; SEAM; MA				X	X	X	X	X	X	X	X	X	X	X	X					
<i>Output 3.1 Pilot project on adequate management of illegal dumpsites in the RBSMBA to reduce global impacts</i>																					
3.1.1 Elaborate plan for RBSMBA	PMU; SEAM; MA	X	X	X	X	X															
3.1.2 Implement cleanup pilot in RBSMBA	PMU; SEAM; MA				X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
<i>Output 3.2 Pilot project on collection-separation of MSWs (10 ton/day) to recover value contained in wastes</i>																					
3.2.1 Develop a web-based system for exchange of recyclable materials	PMU; SEAM					X	X	X	X												
3.2.2 Develop collection/separation pilot (10t/day)	PMU; MA; other					X	X	X	X	X	X	X	X	X	X	X					
<i>Output 3.3 Pilot project on recycling (6 ton/day) to recover value contained in the MSWs</i>																					
3.3.1 Elaborate cost-benefit analysis and 6 business plans	PMU; MA	X	X	X	X																
3.3.2 Strengthen service	PMU; MA	X	X	X	X	X	X	X	X												

Task	Responsible Party	Year 1				Year 2				Year 3				Year 4				Year 5			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
providers, CSOs and waste pickers																					
3.3.2 Develop recycling pilot (6t/day)	PMU; MA; other					X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
<i>Output 4.1: Management plan of the Banco San Miguel and Bahia de Asuncion Reserve approved and under initial implementation</i>																					
4.1.1. Finalize management plan, public consultation and approval	PMU; SEAM; MA	X	X	X	X																
4.1.2 Establish management committee	PMU; SEAM; MA	X	X																		
4.1.3 Establish a ranger corps	PMU; SEAM; MA			X	X																
4.1.4 Develop cleanup & environmental education campaigns	PMU; MOPC; SEAM; MA; CSOs		X	X			X	X			X	X			X	X			X	X	
4.1.5 Develop infrastructure for environmental interpretation, monitoring, equipment	PMU; MOPC; SEAM; MA; SEN			X	X		X	X			X										
4.1.6 Restore habitats	PMU; MOPC; SEAM; MA						X	X			X	X			X	X					
<i>Output 4.2: Management plans for Parque Guasu Metropolitano and Jardin Botanico de Asuncion</i>																					
4.2.1 Update JBA management plan and environmental adequacy	PMU; MA		X	X			X	X	X												
4.2.2 Elaborate PGM management plan	PMU; MOPC		X	X			X	X	X												
4.2.3 Develop information hub in PGM	PMU; MOPC			X		X	X	X			X	X	X	X	X	X	X	X	X	X	
<i>Output 4.3 Asuncion Green Corridor</i>																					
4.3.1 Establish the green corridor	PMU; SEAM; MOPC; MA		X	X			X	X													
4.3.2 Training of urban park rangers	PMU; SEAM; MA; MOPC; CSOs; academia						X	X			X	X			X	X			X	X	
4.3.3 Undertake annual bird census and inventory	PMU; SEAM; MA; Guyra Py; academia		X	X			X	X			X	X			X	X			X	X	
4.3.4 Elaborate environmental education and awareness raising materials	PMU; SEAM; MOPC; MA; CSOs; academia		X	X			X	X			X	X			X	X			X	X	

Task	Responsible Party	Year 1				Year 2				Year 3				Year 4				Year 5			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
4.3.5 Financial sustainability – concerts Birds in Paraguayan Music	PMU; SEAM; MOPC; STP; MA; Guyra Py; philharmonic orchestra		X	X	X		X	X	X		X	X	X		X	X	X		X	X	X
<i>Output 5.1: Project M&E System established and generating periodic reports</i>																					
5.1.1 M&E of project progress and performance	PMU; UNDP	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
<i>Output 5.2: Mid-term Review and Final Evaluation</i>																					
5.2.1 Mid-term review	PMU; UNDP											X									
5.2.2 Final evaluation	PMU; UNDP																				X
<i>Output 5.3: Knowledge products, best practices and lessons learned published and disseminated</i>																					
5.3.1 Systematize and publish best practices and lessons learned	PMU								X				X				X				X

Annex B. Monitoring Plan: The Project Coordinator will collect results data according to the following monitoring plan.

Monitoring	Indicators	Description	Data source/Collection Methods	Frequency	Responsible for data collection	Means of verification	Assumptions
<p>Project objective from the results framework</p> <p>Improve the quality of life in the Asuncion Metropolitan Area (AMA) and deliver multiple benefits through the integration of transport and solid waste management and green infrastructure into a framework for a sustainable and resilient city</p>	<p>Number of new partnership mechanisms with funding for sustainable management solutions of natural resources, ecosystem services, chemicals and waste at national and/or sub-national level</p>	<p>The Asuncion Autonomous Institute (IAPA) will be established to lead urban planning processes in Asuncion</p>	<p>MA reports Supervision visits Interviews with IAPA authorities and staff UNDP Capacity Scorecard/Sustainable City Scorecard</p>	<p>Annually Reported in DO tab of the GEF PIR</p>	<p>Project Coordinator, with support of Outcome 1 technical specialist and in coordination with Municipality of Asuncion)</p>	<p>Municipal ordinance establishing IAPA IAPA design documents (ToR, organizational structure and manuals) MA and IAPA reports IAPA annual work plans and budgets</p>	<p>Political will to develop partnership mechanisms in association with different sectors and allocation of financial, technical and administrative resources for sustainability of results</p>
	<p>Number of direct participation structures of civil society in urban planning and management that operate regularly and democratically</p>	<p>One (1) platform of municipal development councils for dialogue and coordination</p>	<p>STP reports MA reports Interviews, surveys to CSO and private sector platform members</p>	<p>Annually Reported in DO tab of the GEF PIR</p>	<p>Project Coordinator with support of Outcome 1 technical specialist and in coordination with Municipality of Asuncion)</p>	<p>Terms of reference for platform Membership registry Minutes of meetings Platform action plan</p>	<p>Political will to incorporate key stakeholders with emphasis in civil society to participate in urban planning, implementation and monitoring processes. Interested private and civil society sector parties willing to engage with public sector in citizenship participation processes with gender sensitive approaches.</p>
	<p>Quantity of GHG emissions mitigated and sequestered through transport oriented development, green infrastructure and solid waste management policy uptake</p>	<p>Tons of CO₂e estimated for project interventions in transport, solid waste management and green infrastructure sectors.</p>	<p>AMA emissions inventory Biennial reports to UNFCCC GEF TEEMP Models</p>	<p>Annually Reported in DO tab of the GEF PIR</p>	<p>Project coordinator with support of Outcome 2 technical specialist, consultants and in coordination with SEAM, MOPC and Municipality of Asuncion.</p>	<p>AMA emissions inventory Biennial reports to UNFCCC GEF TEEMP Models</p>	<p>Participating national and municipal institutions and private sector are willing to make the required investments for adequate implementation of GHG emissions reductions.</p>

Monitoring	Indicators	Description	Data source/Collection Methods	Frequency	Responsible for data collection	Means of verification	Assumptions
	Quantity of UPOP emissions reduced through an integrated waste and chemical management system	gTEQ reduced through three pilots for adequate management dump sites (formal and informal) and e-wastes; other materials and chemical residues such as obsolete pesticides or their containers with remains, including POP pesticides	National Implementation Plan UNEP toolkit to determine gTEQ	Annually Reported in DO tab of the GEF PIR	Project Coordinator with support of Outcome 3 technical specialist, consultants and in coordination with SEAM and Municipality of Asuncion.	SEAM reports to international conventions UNEP toolkit data and results	Participating national and municipal institutions and private sector are willing to make the required investments for adequate implementation of UPOP emissions reductions.
	Increase in 1% of global populations (number of individuals) of 5 species found seasonally at site	Number of individuals will be counted for the following species: Buff-breasted Sandpiper (<i>Tryngites subruficollis</i>); American Golden Plover (<i>Pluvialis dominica</i>); Lesser Yellowlegs (<i>Tringa flavipes</i>); White-rumped Sandpiper (<i>Calidris fuscicollis</i>); and Pectoral Sandpiper (<i>Calidris melanotos</i>)	Biodiversity monitoring methodology (tbd in project year 1) Annual bird census in Asuncion bay and green corridor	Annually Reported in DO tab of the GEF PIR	Project Coordinator with support of Outcome 4 technical specialist, consultants and in coordination with SEAM and Municipality of Asuncion.	Monitoring reports Bird census SEAM reports MA reports Guyra Paraguay reports	Participating national and municipal institutions are willing to make the required investments for adequate implementation of biodiversity conservation measures
Project Outcome 1 Enabling framework for a green sustainable city enhances integrated urban planning of the	Level of capacity improvement of 3 institutions with mandates in sustainable city issues, measured through the UNDP	SEAM, MOPC and M.A. will improve their capacities to fulfill their institutional mandates in project related sectors.	Interviews with key staffs of SEAM, MOPC and MA UNDP Capacity Scorecard	Annually Reported in DO tab of the GEF PIR	Project Coordinator with support of Outcome 1 technical specialist and SEAM, Municipality of	UNDP Capacity Scorecard	The three institutions recognize the need to improve institutional processes, collaboration and cooperation to better fulfill their mandates and incorporating issues

Monitoring	Indicators	Description	Data source/Collection Methods	Frequency	Responsible for data collection	Means of verification	Assumptions
AMA	Capacity Scorecard, with gender approach				Asuncion and MOPC technicians		related to gender equality, social inclusion and vulnerable groups, and implement proposed improvements.
	Level of improvement of institutional capacities in planning, implementation and monitoring of urban, resilient, adaptive and sustainable growth of 3 institutions measured through Sustainable City Scorecard, with gender approach	SEAM, MOPC and M.A. will improve their capacities to achieve urban sustainability and resilience.	Interviews with key staffs of SEAM, MOPC and MA (and others that may be included) Sustainable City Tracking Tool and Scorecard	Annually Reported in DO tab of the GEF PIR	Project Coordinator with support of Outcome 1 technical specialist and SEAM, Municipality of Asuncion and MOPC technicians	Sustainable City Tracking Tool and Scorecard	The participating institutions recognize the need to improve institutional processes, collaboration and cooperation for sustainable and resilient urban planning incorporating issues related to gender equality, social inclusion and vulnerable groups, and implement proposed improvements.
	Percentage of increase of the municipal budget allocated to infrastructure works for the development of a sustainable city	The sustainable city financial strategy will improve municipal collection and increase revenues to allow adequate funding to promote urban development	MA budgets	Annually Reported in DO tab of the GEF PIR	Project Coordinator with support of Outcome 1 technical specialist and Municipality of Asuncion technicians	MA budgets MA annual reports	Municipality bodies (executive and legislative) are willing to jointly prioritize increased annual allocations for infrastructure works in the municipal budgets.
	Surface area (hectares) with improved biodiversity conservation from infrastructure development restrictions through mainstreaming green corridor restrictions and finance into urban plans and transport	The Green corridor will be mainstreamed into the urban planning and transport sectors including EIA (ie restrictions for development in the green corridor)	Land use plans EIA regulations Sustainable City Tracking Tool and Scorecard	Annually Reported in DO tab of the GEF PIR	Project Coordinator with support of Outcome 1 technical specialist and SEAM/ Municipality of Asuncion technicians	Land use plans EIA regulations Sustainable City Tracking Tool and Scorecard	SEAM, Municipality of Asuncion and MOPC incorporate the green areas/infrastructure into their institutional management; allocate resources (financial, technical and administrative) for adequate management; and enforce regulations.

Monitoring	Indicators	Description	Data source/Collection Methods	Frequency	Responsible for data collection	Means of verification	Assumptions
	environmental impact assessments.						
Project Outcome 2 Sustainable mobility and transport in metropolitan Asunción reduces GHG emissions from urban transport	Number of kilometers of dedicated urban bicycle paths constructed and maintained	100 km bicycle lane system will be designed, of which 30 km will be initially piloted.	MA and Metrobus project reports Field visits and observations	Annually Reported in DO tab of the GEF PIR	Project Coordinator with support of Outcome 2 technical specialist, consultants and MOPC and Municipality of Asuncion technicians	MA reports Metrobus project reports	MOPC and Municipality of Asuncion collaborate and coordinate the design, construction and maintenance of bicycle paths
	Number of pilot traffic management measures implemented	Eight (8) measures will be piloted, such as parking charges and restrictions, temporal one-way street implementation, reversible lanes, traffic signs, and dedicated bus lanes in a major city street)	MA and MOPC reports Field visits and measurements Surveys	Annually Reported in DO tab of the GEF PIR	Project Coordinator with support of Outcome 2 technical specialist, consultants and MOPC and Municipality of Asuncion technicians	MA resolutions on traffic measures Photographic records Press clips	STP, MOPC, SEAM and Municipality of Asuncion are willing to share the information generated by each institution and manage the implementation of pilot interventions in a coordinated manner
	Number of bus routes optimized to complement the BRT and including the construction of bus stop shelters for optimized passenger experience	30 bus routes will be optimized and 30 bus stop shelters will be constructed along the optimized routes.	MOPC/VMT, Metrobus project, SEAM and municipalities' reports Interviews, surveys to bus companies and passengers	Annually Reported in DO tab of the GEF PIR	Project Coordinator with support of Outcome 2 technical specialist, consultants and MOPC technicians	Consultant reports on route restructuring Bus stop shelter design and protocol Institutional reports Resolutions granting new routes	MOPC and private sector are willing to coordinate and agree on the restructuring of bus routes. MOPC and Municipality of Asuncion coordinate the implementation of bus stop shelters.
	Number of women users of optimized routes who value that the new routes improve their use of	20% out of total estimated female users of new bus routes who are satisfied with their	MOPC/VMT, Metrobus project, interviews, surveys to bus companies and passengers	Annually Reported in DO tab of the GEF PIR	Project Coordinator with support of Outcome 2 technical	Surveys and interviews Institutional reports Consultant reports	Design of routes takes into account differentiated uses of transport by men and women

Monitoring	Indicators	Description	Data source/Collection Methods	Frequency	Responsible for data collection	Means of verification	Assumptions
	time and feel safe	use of time and safety			specialist, consultants and MOPC technicians		
	Number of scrapped buses due to implementation of new vehicle emissions, maintenance and scrapping standards for public transport vehicles	100 old buses will be scrapped within a pilot program for removal and scrapping of buses based on air quality standards.	MOPC/VMT, SEAM and municipalities' reports Interviews, surveys to bus companies	Annually Reported in DO tab of the GEF PIR	Project Coordinator with support of Outcome 2 technical specialist, consultants and MOPC technicians	Emissions, maintenance and scrapping standards Air quality management plan MOPC/VMT resolution for scrapping or re-location of selected buses	MOPC, BRT project, Municipality and private sector are willing to collaborate and agree on the buses that will be scrapped.
Project Outcome 3 Improved chemicals and waste management system reduces emissions of UPOPs, GHGs and toxic chemicals	Number of tons/day of better managed wastes through a pilot on collection and separation of MSW	One (1) 10 ton/day demonstration on collection-separation	MSW management master plan Supervision visits to separation pilot Data provided by pilot project operator	Annually Reported in DO tab of the GEF PIR	Project Coordinator with support of Outcome 3 technical specialist, consultants and SEAM technicians	Operational reports of pilot project operator	Municipalities and workers are willing to coordinate in the implementation of MSW management measures.
	Number of tons of materials recovered/ recycled/day through a pilot on recovery of the value contained in MSW	One (1) 6 ton/day demonstration on recycling	MSW management master plan Supervision visits to recycling pilot Data provided by pilot project operator	Bi-annually Reported in DO tab of the GEF PIR	Project Coordinator with support of Outcome 3 technical specialist, consultants and SEAM technicians	Operational reports of pilot project operator	Municipalities and workers are willing to coordinate in the implementation of MSW management measures. Business plans demonstrate positive results for implementation of pilot recycling interventions.
	Percentage of increase in incomes of waste pickers incorporated into pilot interventions (at least 50% of workers are female).	50 waste pickers will be formally incorporated into pilot demonstrations (cleanup brigade in RBSMBA, collection-separation facility,	Interviews, socio-economic survey to waste pickers	Annually Reported in DO tab of the GEF PIR	Project Coordinator with support of Outcome 3 technical specialist, consultants and	Employment contracts Socio-economic survey results	Female waste pickers are willing to be incorporated in formal jobs and improve their livelihoods.

Monitoring	Indicators	Description	Data source/Collection Methods	Frequency	Responsible for data collection	Means of verification	Assumptions
		and recycling facility) with an estimated 50% increase over baseline incomes			SEAM technicians		
Project Outcome 4 Emplacing and improving Protected Area and Urban Green Infrastructure management	Level of improvement of management effectiveness score of 3 urban protected areas, measured by the GEF/METT	The RBSMBA, JBA and PQM will be strengthened to improve their management	Interviews with SEAM, MA, Management Committee, rangers GEF/METT scorecard completed for 3 protected areas Management effectiveness tool for green corridor	Mid-term and End of Project (EOP) Reported in DO tab of the GEF PIR	Project Coordinator with support of Outcome 4 technical specialist, consultants and SEAM and Municipality technicians	GEF/METT scorecard Management Plans Management Committee reports SEAM annual reports MA annual reports MA, SEAM budgets Management effective tool for green corridor	SEAM, Municipality of Asuncion and MOPC are willing to build their capacities, collaborate and cooperate for protected area management. MOPC is willing to provide financial support to protected areas through its investments programs. Civil society is aware, takes care and gets involved in protected area management.
	Number of hectares of green areas with improved management	5,793 hectares of public and private green areas will be recognized as a green corridor and managed under an ecosystem approach.	MA ordinances SEAM and MOPC resolutions Geospatial data	Mid-term and EOP Reported in DO tab of the GEF PIR	Project Coordinator with support of Outcome 4 technical specialist, consultants and SEAM and Municipality technicians	Legal instrument recognizing the green corridor MA, SEAM and MOPC annual reports Geospatial data	SEAM, Municipality of Asuncion and MOPC incorporate the green corridor into their institutional management and coordinate allocation of resources (financial, technical and administrative) for adequate management. Civil society aware and participating in taking care of the green corridor.
	Number of hectares of habitats in Bahia de Asuncion	20 hectares of the bay invaded by <i>Mimosa pigra</i> will	Interviews with park rangers Field visits	Annually Reported in DO tab of the GEF	Project Coordinator with support of	RBSMBA Management Committee reports	SEAM, Municipality of Asuncion, MOPC and other stakeholders

Monitoring	Indicators	Description	Data source/Collection Methods	Frequency	Responsible for data collection	Means of verification	Assumptions
	rehabilitated and secured for 28 species of Nearctic migratory birds and 47 species of southern South American migratory birds	be cleaned and 20 additional hectares of beach areas will be restored to recover habitats.	GPS data Annual bird census	PIR	Outcome 4 technical specialist, consultants and SEAM and Municipality technicians	Guyra Paraguay reports SEAM/MA annual reports Bird census data	coordinate actions to improve, restore and maintain habitats. Civil society involved in restoration activities and taking care of restored habitats.
	Number of persons using green areas (disaggregated by sex) who are involved in the improvement processes, understand the links with quality of life and cultural richness and feel safe	50% of users (at least 20% women) that use green areas are involved in improvement and appreciate them	Surveys and interviews	Annually Reported in DO tab of the GEF PIR	Project Coordinator with support of Outcome 4 technical specialist, consultants and SEAM and Municipality technicians	Surveys and interviews Institutional reports CSO reports	Civil society is involved in restoration activities and in taking care of habitats.
Project Outcome 5 Dissemination of Lessons-learned, monitoring & evaluation	Level of project implementation and achievement of results (percentage of budgetary execution)	Implementation of the M&E Plan.	Monitoring of project indicators Audits Supervision missions Field visits to pilot projects Project Board meetings	Annually Reported in DO tab of the GEF PIR	Project Coordinator with support of technical specialists for each outcome	Monitoring reports Back-to-office reports Audit reports Minutes of meetings	Project partners have the political will to make progress toward a sustainable city, assume project ownership and ensure sustainability of results.
	Number of knowledge products and publications on best practices and lessons learned (at least 1 on gender)	Eight (8) Urban Sustainability Booklets covering different project themes, best practices and lessons learned	Interviews, surveys Success stories Case studies	Annually (beginning in PY2) Reported in DO tab of the GEF PIR	Project Coordinator UNDP CO	Project technical memories	Project partners are open about project challenges and successes, as well as lessons-learned so these can be captured, published and disseminated at national and international level.
Mid-term GEF Tracking Tool	N/A	N/A	Standard GEF Tracking Tool available at www.thegef.org Baseline GEF	After 2 nd PIR submitted to GEF	Project consultant in coordination/consultation with project partners	Completed GEF Tracking Tool	Data and information available from project partners

Monitoring	Indicators	Description	Data source/Collection Methods	Frequency	Responsible for data collection	Means of verification	Assumptions
			Tracking Tool included in Annex.				
Terminal GEF Tracking Tool	N/A	N/A	Standard GEF Tracking Tool available at www.thegef.org Baseline GEF Tracking Tool included in Annex.	After final PIR submitted to GEF	Project consultant in coordination/consultation with project partners	Completed GEF Tracking Tool	Data and information available from project partners
Mid-term Review	N/A	N/A	To be outlined in MTR inception report	Submitted to GEF same year as 3 rd PIR	Independent evaluator	MTR Report	Findings from the MTR will be used to revise the project's progress and to establish the corrective measures to achieve project objectives.
Environmental and Social risks and management plans, as relevant.	N/A	N/A	Updated SESP and management plans	Annually	Project Coordinator UNDP CO	Updated SESP	

Annex C: Evaluation Plan:

Evaluation Title	Planned start date Month/year	Planned end date Month/year	Included in the Country Office Evaluation Plan	Budget for consultants	Other budget (i.e. travel, site visits etc...)	Budget for translation
Terminal Evaluation	October 2021	October 2021	Yes	International consultants: USD 40,000 National consultants: USD 15,000	Included in consultants' budget	USD 5,000
Total evaluation budget				USD 60,000		

Annex D. GEF Tracking Tools at baseline

See attached excel files

Annex E. Terms of Reference for Project Board and Project Management Unit

Terms of Reference: Project Coordinator

The Project Coordinator will act as the head of the Project Management Unit (PMU) and will be responsible for overall project implementation and supervision of the PMU staff. She/He will work under the supervision of UNDP, and will coordinate with other concerned stakeholders to ensure adequate project implementation.

The Project Coordinator will run the Project on a day-to-day basis on and his/her prime responsibility will be to ensure that the project produces the results specified in the project document, to the required standards of quality and within the specified constraints of time and cost. She/He will be a person with significant experience related to the scope of the project in addition to strong project management skills. She/He will provide overall managerial direction and leadership for the project, working closely with Institutions represented in the Project Board, the Technical Committee and key stakeholders. In addition, the Project Coordinator will have technical responsibilities under Outcomes 1, 2, 3 and 4 of the project.

Main duties and responsibilities:

- Provide overall project coordination and M&E for the achievement of the Project outcomes and objectives, based on Results-Based-Management.
- Coordinate work with UNDP offices and programs to ensure the alignment of the project results with UNDP's Strategic Plan and the Country Programme Document and Gender Strategy.
- Manage day-to-day implementation of the project, coordinating project activities in accordance with the rules and procedures of UNDP and based on the general guidance provided by the Project Board.
- Establish the PMU's internal working procedures and coordination mechanisms with UNDP, Project Board, the Technical Committee and other key stakeholders.
- Lead and coordinate a multidisciplinary work team overseeing that all activities respond to the objectives and outcomes established in the project document, the annual work plans and procurement plans, as per UNDP and GEF regulations.
- Supervise the activities of the PMU staff and provide feedback, including analysis and approval of work plans and activity reports.
- Prepare the annual work plans and budgets and submit them for approval of the Project Board.
- Undertake the project M&E Plan, prepare project progress reports and support preparation of annual implementation reports, as well as monitoring reports, in coordination with the UNDP-GEF extended team.
- Ensure a gender approach is maintained in all activities, including specific activities and in coordination with UNDP's Gender Strategy.
- Validate CDRs in close coordination with the project's Administration.
- Ensure adequate inter-institutional coordination and stakeholder participation mechanisms during project implementation.
- Propose project expenditures and procurement ensuring that they respond to the principle of transparency and best value for money, and are in accordance with the activities established in the project document and plans.
- Supervise drafting of TORs for project activities, analyze and approve technical reports.
- Undertake meetings and visits to the project stakeholders as part of the overall supervision of project implementation and prepare visit reports.
- Continuously analyze technical, political and institutional aspects and promote corrective actions or any other type of adjustments that may be needed for effective and efficient achievement of results.
- Work closely with the UNDP offices in the region in organizing and providing technical and logistic support and coordination to all missions and assignments by international and national consultants.
- Represent the project in national and international forums.

- Prepare, in accord with the Environment and Energy Programme Officer, the justification for changes in budgets, activities and objectives that exceed the initially agreed limits.

Profile: At least 8 years of experience in project management and implementation, as well as significant direct experience related to the scope of the project; experience in integrated urban planning and sustainability, and capacity building issues is highly desirable; experience in interacting with public and private sector and civil society; leadership as well as strong management and interpersonal skills; computer skills; high flexibility and capacity to work under pressure.

Terms of Reference: Project Administrator

The administrative/finance assistant will be stationed in the Project Management Unit (PMU) and will provide support to the Project Coordinator in management and administration of the project. The Project Administrator will be responsible for project administrative and financial management. In addition on a part time basis the incumbent will provide logistical support to delivery of technical components of the project. She/He will work under the supervision of the Project Coordinator and will coordinate with UNDP and Lead National Institution to ensure adequate project management.

Main duties and responsibilities:

- Administrate the project's financial resources, mainly in processes related to planning, administration, procurement, payments, conciliations, budgetary revisions and inventories, ensuring the adequate administrative and financial management in accordance with UNDP procedures.
- Organize workshops and meetings such as: Inception Workshop, Project Board meetings, Technical Committee meetings, trainings in coordination with the project's technical team.
- Support the Project Coordinator in administrative/operational aspects for a satisfactory implementation of programmed activities based on the Results Framework and annual work plan, and UNDP-GEF procedures.
- Participate in preparation of Annual Work Plans. Prepare Procurement Plans and project budgets based on the Annual Work Plans.
- Ensure that transactions are undertaken in accordance with the Procurement Plan and agreements and/or contracts signed with third parties, and UNDP rules and regulations.
- Management of administrative, accounting and financial files
- Verify all processes for micro-purchases up to USD 5,000 and submit the supporting documents to UNDP Procurement Unit for approval before awarding.
- Verify and participate in procurement processes for goods and/or services up to USD 10,000 to ensure they comply with UNDP rules and regulations; submit the supporting documents to the UNDP Procurement Unit for verification, approval and award.
- Participate in procurement processes for goods and/or services (including professional services) above USD 10,000, preparing technical specifications or terms of reference, establishing a list of suppliers and supporting, if necessary, the Procurement Unit to follow-up the process.
- Submit to the Operations Unit procurement requests for goods and/or services above USD 30,000 and supporting documents, including but not limited to, technical specifications, terms of reference and tender documents.
- Participate in evaluation committees with the technician in charge.
- Undertake financial monitoring and control of the project, as well as disbursement schedules to ensure adequate recording of all financial operations.
- Countersign all supporting documents submitted for signature by Project Coordinator, Programme Officer and/or Resident Representative.
- Verify that all payments for remunerations and other services are made in accordance with the terms of the contracts or agreements and the corresponding authorizations.
- Ensure adequate and updated recording of all goods procured with project funds.

- Provide support to project audits and external evaluations.
- Verify quarterly and annual CDRs for certification.
- Manage the project office (contracts, cleaning services, etc.)
- Other tasks necessary for adequate project management.

Profile: At least 5 years of experience in accounting and financial matters; experience in project administrative and financial management; acquaintance with UNDP procedures is highly desirable; computer skills; initiative and responsibility; teamwork ability, high flexibility and capacity to work under pressure; and social sensitivity especially a gender approach.

Terms of Reference Project Board

Project Board: The Project Board is responsible for making by consensus, management decisions when guidance is required by the Project Coordinator, including recommendation for UNDP/Implementing Partner approval of project plans and revisions. In order to ensure UNDP's ultimate accountability, Project Board decisions should be made in accordance with standards that shall ensure management for development results, best value money, fairness, integrity, transparency and effective international competition.

The Project Board will meet at least once a year. It will provide overall guidance for the project throughout its implementation; specifically, the PB will be responsible for: (i) approving the annual work plan and budget; (ii) achieving coordination among the various government agencies and key stakeholders; (iii) guiding project implementation to ensure alignment with national and local planning processes and sustainable resource use and conservation policies, plans and conservation strategies; (iv) ensuring the participation of key stakeholders in consensus building processes; (v) overseeing the work being carried out by the implementation units and local committees; (vi) reviewing key reports (such as PIR); (vii) approved the Terminal Evaluation Report, and (viii) monitoring progress and the effectiveness of project implementation

The Project Board will take corrective action as needed to ensure the project achieves the desired results. The Project Board will hold project reviews to assess the performance of the project and appraise the Annual Work Plan for the following year. In the project's final year, the Project Board will hold an end-of-project review to capture lessons learned and discuss opportunities for scaling up and to highlight project results and lessons learned with relevant audiences. This final review meeting will also discuss the findings outlined in the project terminal evaluation report and the management response.

During its first meeting, the Project Board members will prepare and adopt detailed Terms of Reference for its functioning.

Annex F. UNDP Social and Environmental and Social Screening Template (SESP)

See attached file.

Annex G. UNDP Project Quality Assurance Report

See attached file.

Annex H. Results of the capacity assessment of the project implementing partners

SEAM Scorecard

Capacity Outcome 1: Capabilities for engagement: Individuals and relevant organizations (users of resources, the owners, consumers, the community and political leaders, managers of public and private sector and experts) participate in a proactive and constructive manner in the management of the global environmental problem.		
Indicators	Score	Comments
1) Legitimacy degree/ mandate of the environmental organizations: this indicator measures whether the leading organizations are identified, if their respective responsibilities are clearly defined and if their authority is recognized.	0 Environmental management organization responsibilities are not clearly defined	
	1 Responsibilities of environmental management organization are identified	The SEAM oversees the development, coordination and implementation of environmental policies of Paraguay. It covers the three focal points of the Rio conventions. However, participating officials mentioned that the SEAM is not recognized today as one of the main bodies in conservation and sustainable management of natural resources issues. Its image is largely affected by inefficient management mostly, by the existing overlap of duties and competency.
	2 authority and legitimacy of all the main organizations responsible for the management of the environment are partially recognized by stakeholders	
	3 authority and legitimacy of all the main organizations responsible for the management of the environment fully recognized by stakeholders	
2) Existence of operational co-management mechanisms: This indicator measures the existence of mechanisms of public and private co-management and whether these mechanisms are functional.	0 There are no co-management mechanisms in place	
	1 Some co-management mechanisms are in place and functioning	The current system of environmental management in Paraguay is not very effective, with inadequate knowledge and information which are used to formulate plans and strategies for sectorial and regional development of high quality and resistance. This is largely due to the lack of communication and insufficient collaboration between the institutions concerned, in particular the SISNAM. Despite its existence, the CONAM does not comply with the mandate.
	2 Some co-management mechanisms are formally established through agreements, memorandums of understanding, etc.	
	3 comprehensive co-management mechanisms are formally established and are operational / functional	
(3) Existence of cooperation between stakeholders: this indicator measures the participation of stakeholders, their	0 identification of stakeholders and their participation / involvement in management decisions is poor	

identification, the establishment of processes of consultation of interested parties and the active contribution of these actors to make decisions.	1 the stakeholders are identified, but their participation in the decision-making process of management is limited	There is a limited involvement of stakeholders in the consultation process. This will be informed for the formulation of policies. Intergovernmental cooperation, mainly with the SEAM is practically non-existent, despite the existence of SISNAM and the CONAM. Experts from academic institutions and NGOs are involved in the decision-making process on environmental issues, but their participation is limited. Specially, this is the case of the private sector participation.
	2 stakeholders are identified and mechanisms for regular consultations are established	
	3 stakeholders are identified and actively contribute to the established processes of decision making of participatory management	

Capacity Outcome 2: Capacity to generate, access and use of the information and knowledge

Individuals and organizations have the skills and expertise to research, acquire, communicate, educate and make use of relevant information to be able to diagnose and understand the environmental global problems and possible solutions.

Indicators	Score	Comments (how it is and what is needed)
<p>4) Degree of environmental awareness of interest groups: this indicator measures the level of knowledge of stakeholders on global environmental issues and the solutions that are being implemented and the possibility of participating in the implementation of these solutions.</p>	<p>0 Stakeholders are not aware about global environmental problems and their possible solutions.</p>	
	<p>1. Stakeholders are aware of the environmental problems around the world, but not of possible solutions</p>	<p>Environmental awareness is generally low among all stakeholders. The general public in the Paraguay is does not know and it is not interested in the environment or the Rio Conventions, in particular with regard to the contribution of the Rio Conventions in the achievement of national and local socio-economic priorities. Although several of the key players are aware of environmental issues at a global level, they do not have enough information to carry out a thorough analysis... Although there are some stakeholders that help to raise awareness, this is limited.</p>
	<p>2. Stakeholders are aware of environmental problems worldwide and their possible solutions but do not know how to participate.</p>	
	<p>3. interested parties are aware of the global environmental problems and are actively participating in the implementation of related solutions</p>	
<p>(5)The access and sharing of environmental information by interested parties: this indicator measures the information needs, if identified, the adequacy of information management infrastructure in place and the exchange of this information.</p>	<p>0 Environmental information needs are not identified and the information management infrastructure is inadequate</p>	
	<p>1. the environmental information needs are identified but information management infrastructure is inadequate</p>	<p>Exchange of data, information and knowledge related to better decisions-making that reflect environmental criteria at global level in the sectorial plans of development, is minimum. Although partially available</p>

		environmental information, the exchange is limited to a handful of interested partners, and they are usually carried out within the framework of the projects. The exchange of information to municipal and district authorities is very limited, largely because of the absorption capacity of the institutions.
	2. the environmental information is partially available and shared among interested parties, but do not cover all areas of activity and / or infrastructure management to manage and provide access to information to the public is limited	
	3 comprehensive environmental information is available and shared through a proper information management infrastructure	
6) Scope of inclusion / use of traditional knowledge in environmental decision-making: This indicator measures if traditional knowledge is being explored, if the sources of traditional knowledge are identified, captured and shared among the stakeholders for effective participatory decision-making processes.	0 The traditional knowledge is ignored and not taken into account in the corresponding participatory decision-making processes	
	1. the traditional knowledge is identified and recognized as important, but it is not collected and used in the relevant participative decision-making processes	Out of projects financed with external funds, environmental education programmes are virtually non-existent. There are some programs that seek to raise awareness about the sustainable management of forests with active participation of stakeholders, but these are only developed and implemented.
	2. The traditional knowledge is collected but not systematically used in relevant processes of participatory decision-making	
	3. the traditional knowledge is collected, used and shared for the effective participatory decision-making processes	
7) Existence of environmental education programs: This indicator measures both formal and informal environmental education programs instead of addressing global environmental issues.	0 There are no environmental education programmes in place	
	1 environmental education programs are partially developed and partially delivered	Although there has been a limited amount of research that has contributed to the formulation of environmental, forest and agricultural policies, this is not led to strategic implementation. This

		includes the lack of knowledge and the use of applied research for the formulation of integrated plans for development and land use at the sub-national level.
	2 environmental education programs are fully developed but partially delivered	
	3. There are comprehensive environmental education programs and they are being delivered	
8) Scope of the linkage between research / science of the environment and policy development: This indicator measures the relationship between environmental policy and research; including the identification of the needs of research and research strategies and programs; as well as the importance of research for policy- development.	0 there is no linkage between the development of environmental policies and strategies and science / research programs	The importance of traditional and indigenous knowledge is recognized, but they are not collected and used in participatory decision-making processes. However, this is currently being addressed by a series of parallel projects, including recently started ONUREDD project.
	1 It needs research for the development of identified environmental policies , but they are not translated into strategies and relevant research programmes	
	2 strategies and relevant programmes for environmental research policy exists, but the information from the investigation does not fully respond to the needs of policy research	
	3 relevant research outcomes are available for the development of environmental policy	

Capacity Outcome 3: Capabilities for the strategy, policy and development law The individuals and the organizations have the capacity to plan and to develop the effective environmental policy and related legislation, strategies and plans - they are based on the processes of decision making informed for world-wide the environmental management.		
Indicators	Score	Comments (how it is and what is needed)
(9) Scope of the planning and development of the environmental strategy: this indicator measures the quality of the process of planning and strategy development; If the planning and strategy	0 The planning and environmental strategy development process is not coordinated and it does not produce plans and environmental strategies	

<p>development process produces plans and strategies related to the management of the environment; and if the resources and coordination mechanisms are in place for the implementation of such plans, programmes and projects.</p>	<p>1. The planning and environmental strategy development process does produce adequate plans and environmental strategies but they are not on-going/ they are not used.</p>	
	<p>2 plans and environmental strategies are produced, but just partially implemented due to funding constraints and / or other problems</p>	<p>Appropriate environmental plans and strategies are produced and implemented only in part, due to several problems. These include insufficient knowledge of best practices or knowledge needed to formulate more resistant and integrated plans of use of the land and of development, as well as insufficient of financial resources.</p>
	<p>3. The process of planning and environmental strategy of development is well coordinated by leading environmental organizations and produces the necessary plans and environmental strategies being applied</p>	
<p>(10) The existence of an appropriate environmental policy and regulatory frameworks: this indicator measures the integrity of regulatory and policy frameworks, the existence and the adoption of policies and relevant laws and if the mechanisms to enact, comply and enforce them / Policies and laws are established.</p>	<p>0 The environmental and regulatory policy are insufficient; they do not provide an favourable environment</p>	
	<p>1 There are some policies and relevant environmental laws but few are implemented and enforced</p>	
	<p>2 There are the right frameworks of environmental policy and legislation, but there are problems in the implementation and enforcement of them</p>	<p>The regulatory framework for environmental, forestry and agriculture policies, as well as environmental laws and regulation in force can be considered as adequate. However, they are not applied in an effective manner.</p>
	<p>3 frames of appropriate policy and legislation are implemented and provide an adequate enabling environment; a compliance and enforcement mechanism is established and functions</p>	
<p>(11) Adequacy of the environmental information available for decision making: this indicator measures the adequacy of information available for decision making; If information is made available to decision makers and if this information is updated and used by decision-makers.</p>	<p>0 The availability of environmental information for decision-making is poor</p>	
	<p>1 There is some environmental information, but it is not enough to support environmental decision-making processes</p>	<p>There is some information on the environment available for decision-making on environmental matters, but this is still insufficient for the purpose of making decisions based on best practices. There are a number of web sites that cover environmental issues, but they are of different quality and none of them guarantee the proper flow of correct management of environmental information. They do not clearly articulate best practices for the incorporation of the Rio conventions.</p>

	2 environmental information is relevant for the environmental decision makers, but the process of updating this information is not working properly	
	3. the political and administrative decision-makers obtain and use / update environmental information for environmental decision-making	

Outcome 4 Capacity: Capacities for management and execution		
Individuals and organizations have the skills and knowledge plan-do-check-act to enact environmental policies and regulatory decisions, and to plan and implement management actions / relevant and sustainable solutions for the global environment.		
Indicators	Score	Comments (how it is and what is needed)
(12) Existence and mobilization of resources by the relevant organizations: this indicator measures the availability of resources within the relevant organisations, if potential sources for funding resources are identified and if adequate resources are mobilized.	0 Environmental organizations do not have sufficient resources for their programmes and projects and the requirements have not been evaluated	
	1. the resources needed are known, but are not being addressed	Although the resource needs are known, they are very limited and the resources that are available are not effectively managed. Despite of this being a high priority, administrators who are in charge of the budget are not as sufficiently engaged in resource mobilization.
	2. The sources of funding for these resource requirements are partially identified and resource requirements are partially addressed	
	3 Adequate resources are mobilized and available for the operation of the initiative environmental organizations	
(13) Availability of necessary technical skills and technology transfer: this indicator measures the availability of skills and expertise, technical needs and sources are identified and accessed through the program or project and if there is a basis for an update on national	0 The necessary skills and technology required are not available and the needs are not identified	
	1. The needs of skills and technologies required are identified, as well as their sources	

basis in course of skills and knowledge.	2. Knowledge and technologies needed are acquired, but their access depend on foreign sources	Integrating environmental issues in sectorial and regional planning is not systematic and it is rarely done. Some training is offered, but none on the integration of the provisions of the Rio Conventions in sectorial and regional planning. Sometimes, even when there is technology, there are no national experts who carry out the activities (since they do not have the capacity to do so).
	3.The skills and technologies needed are available and there is a national base, mechanism for knowledge updating and modernization of technologies	

Capacity Outcome 5: The capabilities of monitoring and evaluation		
Individuals and organizations have the capacity to effectively monitor and evaluate the projects and / or programs accomplishments against the expected outcomes and provide feedback for learning, adaptive management and to suggest adjustments to the course of action if necessary to preserve the global environment		
Indicators	Score	Comments (how it is and what is needed)
(14) Adequacy of the monitoring process of the project / program: it measures the existence of a monitoring framework, if monitoring involves interested parties and if the monitoring outcomes report the implementation process.	0 Irregular monitoring of the project being implemented, without a proper monitoring framework detailing what and how to monitor the project or program	
	1. Resources are assigned to monitoring or follow-up, but in itself, project monitoring is carried out periodically	
	2 regular participatory monitoring of outcomes takes place, but this information is only used in part by the implementation of the project / program team	Monitoring will be carried out with the elaboration of programmes and projects financed with external resources, but not in a systematic way within corporate programmes, due to insufficient capacity, including clear and applicable monitoring procedures as well as financial resources.
	3. The monitoring information occurs on time and accurately and is used by the implementation team	

	of learning and, possibly, to change the course of action	
(15) Adequacy of project process of evaluation / programme: this indicator measures the existence of an evaluation framework, if adequate resources and access to the information are available and if the evaluation outcomes report planning process.	0 None or ineffective assessments are conducted without an appropriate plan of evaluation; including the necessary resources	
	1. An appropriate evaluation plan is in place, but the evaluation activities are conducted irregularly	Although there are programs of evaluation, they do not include criteria or indicators to assess their impact on the global environment. These programs are also being irregularly implemented.
	2. The evaluations are carried out in agreement with a plan of adequate evaluation, but the outcomes of the assessment are used only in part for the project / program implementation team and other staff members to design the next generation of projects	
	3 effective assessments are carried out on time and accurately and are used by the implementation team to correct the course of action if it is necessary and learn lessons for future project planning activities.	

Municipality of Asuncion scorecard

Capacity Outcome 1: Capabilities for engagement: Individuals and relevant organizations (users of resources, the owners, consumers, the community and political leaders, managers of public and private sector and experts participate in a proactive and constructive manner in the management of the global environmental problem.		
Indicators	Score	Comments
1) Legitimacy degree/ mandate of the environmental organizations: this indicator measures whether the leading organizations are identified, if their respective responsibilities are clearly defined and if their authority is recognized.	0 Environmental management organization responsibilities are not clearly defined	
	1Responsibilities of environmental management organization are identified	Although there is a basic regulatory framework there are permanent doubts and omissions between the powers of local government and central government on environmental issues.
	2 Authority and legitimacy of all the main organizations responsible for the management of the environment are partially recognized by stakeholders	
	3 authority and legitimacy of all the main organizations	

	responsible for the management of the environment fully recognized by stakeholders	
2) Existence of operational co-management mechanisms: This indicator measures the existence of mechanisms of public and private co-management and whether these mechanisms are functional.	0 There are no co-management mechanisms in place	There are no instances of operational co-management. The municipality of Asunción proposes the creation of the Autonomous Planning Institute of Asuncion- IAPA - to provide technical support to these spaces.
	1 Some co-management mechanisms are in place and functioning	
	2 Some co-management mechanisms are formally established through agreements, memorandums of understanding, etc.	
	3 comprehensive co-management mechanisms are formally established and are operational / functional	
(3) Existence of cooperation between stakeholders: this indicator measures the participation of stakeholders, their identification, the establishment of processes of consultation of interested parties and the active contribution of these actors to make decisions.	0 identification of stakeholders and their participation / involvement in management decisions is poor	The Municipality of Asuncion is in the process of establishing a Development Council of the city of Asuncion (public/private instance). It will provide for thematic forums to take place which will be undoubtedly address issues such as Land Use Planning and Sustainable Development Plan
	1 the stakeholders are identified, but their participation in the decision-making process of management is limited	
	2 stakeholders are identified and mechanisms for regular consultations are established	
	3 stakeholders are identified and actively contribute to the established processes of decision making of participatory management	

Capacity Outcome 2: Capacity to generate, access and use of the information and knowledge

Individuals and organizations have the skills and expertise to research, acquire, communicate, educate and make use of relevant information to be able to diagnose and understand the environment environmental global problems and possible solutions.

Indicators	Score	Comments (how it is and what is needed)
4) Degree of environmental awareness of interest groups: this indicator measures the level of knowledge of stakeholders on global environmental issues and the solutions that are being implemented and the possibility of participating in the	0 Stakeholders are not aware about global environmental and their possible solutions.	
	1. Stakeholders are aware of the environmental problems around the world, but not of possible solutions	There is a general perception, without much content in citizenship on issues such as climate change and its effects, however there is no general understanding in

<p>implementation of these solutions.</p>		<p>how to influence public policies to generate mitigation actions.</p>
	<p>2. Stakeholders are aware of environmental problems worldwide and their possible solutions but do not know how to participate.</p>	
	<p>3. interested parties are aware of the global environmental problems and are actively participating in the implementation of related solutions</p>	
<p>(5)The access and sharing of environmental information by interested parties: this indicator measures the information needs, if identified, the adequacy of information management infrastructure in place and the exchange of this information.</p>	<p>0 Environmental information needs are not identified and the information management infrastructure is inadequate</p>	<p>Although there are information systems in some institutions of the central government, they are not publicly accessible. At a municipal level a system should be built (probably in the IAPA) to collect, investigate and share key information about environment</p>
	<p>1. the environmental information needs are identified but information management infrastructure is inadequate</p>	
	<p>2. the environmental information is partially available and shared among interested parties, but do not cover all areas of activity and / or infrastructure management to manage and provide access to information to the public is limited</p>	
	<p>3 comprehensive environmental information is available and shared through a proper information management infrastructure</p>	
<p>6) Scope of inclusion / use of traditional knowledge in environmental decision-making: This indicator measures if traditional knowledge is being explored, if the sources of traditional knowledge are identified, captured and shared among the stakeholders for effective participatory decision-making processes.</p>	<p>0 The traditional knowledge is ignored and not taken into account in the corresponding participatory decision-making processes</p>	
	<p>1. the traditional knowledge is identified and recognized as important, but it is not collected and used in the relevant participative decision-making processes</p>	<p>At neighbourhood level, there may be voluntary actions in this matter, however, the rescuing and valuing of traditional knowledge is not encouraged. Some organized groups of the civil society promote this knowledge but there is no public funding to encourage it.</p>
	<p>2. The traditional knowledge is collected but not systematically used in relevant processes of participatory decision-making</p>	
	<p>3. the traditional knowledge is collected, used and shared for the effective participatory decision-making processes</p>	

7) Existence of environmental education programs: This indicator measures both formal and informal environmental education programs instead of addressing global environmental issues.	0 There are no environmental education programmes in place	
	1 environmental education programs are partially developed and partially delivered	There are some few records of environmental education campaigns. Some of them are the openings of spaces of the Botanical Garden for school visits. But there is no broader campaigns aimed at the public at large. These campaigns carried out locally produce greater impact since they are available to the neighbour.
	2 environmental education programs are fully developed but partially delivered	
	3. There are comprehensive environmental education programs and they are being delivered	
8) Scope of the linkage between research / science of the environment and policy development: This indicator measures the relationship between environmental policy and research; including the identification of the needs of research and research strategies and programs; as well as the importance of research for policy- development.	0 There is no linkage between the development of environmental policies and strategies and science / research programs	The municipal government's proposal aims to the Municipal Environmental Plan design (PAM) which is aligned with the national environmental Plan (PAN). For this purpose, the research area and construction of the IAPA database should be strengthened. A municipality/University involvement/alliance is advised.
	1 It needs research for the development of identified environmental policies , but they are not translated into strategies and relevant research programmes	
	2 strategies and relevant programmes for environmental research policy exists, but the information from the investigation does not fully respond to the needs of policy research	
	3 relevant research outcomes are available for the development of environmental policy	

Capacity Outcome 3: Capabilities for the strategy, policy and development law

The individuals and the organizations have the capacity to plan and to develop the effective environmental policy and related legislation, strategies and plans - they are based on the processes of decision making informed for world-wide the environmental management.

Indicators	Score	Comments (how it is and what is needed)
(9) Scope of the planning and development of the environmental strategy: this indicator measures the quality of the process of planning and strategy development; If the planning and strategy development process produces plans and strategies	0 The planning and environmental strategy development process is not coordinated and it does not produce plans and environmental strategies	
	1. The planning and environmental strategy development process does produce adequate plans and	There are city plans (e.g. the Environmental Urban Development Plan of the 2000, the Coastal Strip

<p>related to the management of the environment; and if the resources and coordination mechanisms are in place for the implementation of such plans, programmes and projects.</p>	<p>environmental strategies but they are not on-going/ they are not used.</p>	<p>Plan, the CHA Plan and the ICES / IDB, GHEL Architects effort.) The Municipal proposal aims to revise / update these plans and make them operational. Important: The municipality of Asuncion in 2016 plans to perform the Land Use Planning of POT-ASU Asuncion and immediately the Sustainable Development Plan - PDS - which together with PAM are the stands for local policies of the city.</p>
	<p>2 plans and environmental strategies are produced, but just partially implemented due to funding constraints and / or other problems</p>	
	<p>3. The process of planning and environmental strategy of development is well coordinated by leading environmental organizations and produces the necessary plans and environmental strategies being applied</p>	
<p>(10) The existence of an appropriate environmental policy and regulatory frameworks: this indicator measures the integrity of regulatory and policy frameworks, the existence and the adoption of policies and relevant laws and if the mechanisms to enact, comply and enforce them / Policies and laws are established.</p>	<p>0 The environmental and regulatory policy are insufficient; they do not provide an favourable environment</p>	
	<p>1 There are some policies and relevant environmental laws but few are implemented and enforced</p>	<p>In Paraguay there is a great digest of regulations, international agreements on the subject. At the municipal level, the capital has ordinances on the same line. However, there are many difficulties to enforce them. The area of the municipality of Asuncion on environmental matters has been losing competence through a process of dismemberment of their units. In terms of policies, it has been previously mentioned above the subject of PAM.</p>
	<p>2 There are right frameworks of environmental policy and legislation, but there are problems in the implementation and enforcement of them</p>	
	<p>3 frames of appropriate policy and legislation are implemented and provide an adequate enabling environment; a compliance and enforcement mechanism is established and functions</p>	
<p>(11) Adequacy of the environmental information available for decision making: this indicator measures the adequacy of information available for decision making; If information is made available to decision makers and if this information is updated</p>	<p>0 The availability of environmental information for decision-making is poor</p>	<p>It is clear that in the absence of an instance of environmental information management in the City, there is not intellectual support for decision-making. See comment on the IAPA.</p>
	<p>1 There is some environmental information, but it is not</p>	

and used by decision-makers.	enough to support environmental decision-making processes	
	2. environmental information is relevant for the environmental decision makers, but the process of updating this information is not working properly	
	3. the political and administrative decision-makers obtain and use / update environmental information for environmental decision-making	

Outcome 4 Capacity: Capacities for management and execution		
Individuals and organizations have the skills and knowledge plan-do-check-act to enact environmental policies and regulatory decisions, and to plan and implement management actions / relevant and sustainable solutions for the global environment.		
Indicators	Score	Comments (how it is and what is needed)
(12) Existence and mobilization of resources by the relevant organizations: this indicator measures the availability of resources within the relevant organisations, if potential sources for funding resources are identified and if adequate resources are mobilized.	0 Environmental organizations do not have sufficient resources for their programmes and projects and the requirements have not been evaluated	The Municipality de Asuncion does not have the necessary resources for its programmes. Part of the effort of the Government's plan is to increase collection and to apply it in programmes of action, thus reducing the gap between execution of hard costs (personal services, administrative expenses, etc.) which today represents almost 80% of the municipal budget and the actions.
	1. the resources needed are known, but are not being addressed	
	2. The sources of funding for these resource requirements are partially identified and resource requirements are partially addressed	
	3 Adequate resources are mobilized and available for the operation of the initiative environmental organizations	
(13) Availability of necessary technical skills and technology transfer: this indicator measures the availability of skills and expertise, technical needs and sources are identified and accessed through the program or project and if there is a basis for an update on national basis in course of skills and knowledge.	0 The necessary skills and technology required are not available and the needs are not identified	
	1. The needs of skills and technologies required are identified, as well as their sources	
	2. Knowledge and technologies needed are acquired, but their access depend on foreign sources	It is clear that at least in the beginning of the period of municipal government (2015-2020) and until the municipality improves its investment in action plans it will appeal to external sources of financing. However, the municipal team has collaborators of high technical level and the interest of others who from outside the government are working together and who could well temporarily join efforts to consolidate the municipal team.
	3.The skills and technologies needed are available and there is a national base, mechanism for knowledge updating and modernization of technologies	

Capacity Outcome 5: The capabilities of monitoring and evaluation
Individuals and organizations have the capacity to effectively monitor and evaluate the projects and / or programs accomplishments against the expected outcomes and provide feedback for learning, adaptive management and to suggest adjustments to the course of action if necessary to preserve the global environment

Indicators	Score	Comments (how it is and what is needed)
<p>(14) Adequacy of the monitoring process of the project / program: it measures the existence of a monitoring framework, if monitoring involves interested parties and if the monitoring outcomes report the implementation process.</p>	<p>0 Irregular monitoring of the project being implemented, without a proper monitoring framework detailing what and how to monitor the project or program</p>	<p>The Planning Directorate is dismantled. The municipal government intends to rebuild its team by installing a strengthened planning and monitoring unit within the IAPA (strategic centre of the Municipality) Amongst other actions it aims at establishing a system similar to a Situation Room to guide the monitoring of actions of all kinds.</p>
	<p>1. Resources are assigned to monitoring or follow-up, but in itself, project monitoring is carried out periodically.</p>	
	<p>2 regular participatory monitoring of outcomes takes place, but this information is only used in part by the implementation of the project / program team</p>	
	<p>3. The monitoring information occurs on time and accurately and is used by the implementation team of learning and, possibly, to change the course of action</p>	
<p>(15) Adequacy of project process of evaluation / programme: this indicator measures the existence of an evaluation framework, if adequate resources and access to the information are available and if the evaluation outcomes report planning process.</p>	<p>0 None or ineffective assessments are conducted without an appropriate plan of evaluation; including the necessary resources</p>	<p>Comment from previous paragraph applies.</p>
	<p>1. An appropriate evaluation plan is in place, but the evaluation activities are conducted irregularly</p>	
	<p>2. The evaluations are carried out in agreement with a plan of adequate evaluation, but the outcomes of the assessment are used only in part for the project / program implementation team and other staff members to design the next generation of projects</p>	
<p>3 effective assessments are carried out on time and accurately and are used by the implementation team to correct the course of action if it is necessary and learn lessons</p>		

	for future project planning activities.	
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MOPC Scorecard

Capacity Outcome 1: Capabilities for engagement: Individuals and relevant organizations (users of resources, the owners, consumers, the community and political leaders, managers of public and private sector and experts participate in a proactive and constructive manner in the management of the global environmental problem.		
Indicators	Score	Comments
1) Legitimacy degree/ mandate of the environmental organizations: this indicator measures whether the leading organizations are identified, if their respective responsibilities are clearly defined and if their authority is recognized.	0 Environmental management organization responsibilities are not clearly defined	
	1 Responsibilities of environmental management organization are identified	
	2 Authority and legitimacy of all the main organizations responsible for the management of the environment are partially recognized by stakeholders	Presence and visibility
	3 authority and legitimacy of all the main organizations responsible for the management of the environment fully recognized by stakeholders	
2) Existence of operational co-management mechanisms: This indicator measures the existence of mechanisms of public and private co-management and whether these mechanisms are functional.	0 There are no co-management mechanisms in place	
	1 Some co-management mechanisms are in place and functioning	
	2 Some co-management mechanisms are formally established through agreements, memorandums of understanding, etc.	
	3 comprehensive co-management mechanisms are formally established	Mechanism used by the MOPC

	and are operational / functional	
(3) Existence of cooperation between stakeholders: this indicator measures the participation of stakeholders, their identification, the establishment of processes of consultation of interested parties and the active contribution of these actors to make decisions.	0 identification of stakeholders and their participation / involvement in management decisions is poor	
	1 the stakeholders are identified, but their participation in the decision-making process of management is limited	
	2 stakeholders are identified and mechanisms for regular consultations are established	There are cases of donors and the Law on Environmental Impact where there is a need to have an internal protocol starting from the design.
	3 stakeholders are identified and actively contribute to the established processes of decision making of participatory management	

Capacity Outcome 2: Capacity to generate, access and use of the information and knowledge		
Individuals and organizations have the skills and expertise to research, acquire, communicate, educate and make use of relevant information to be able to diagnose and understand the environment environmental global problems and possible solutions.		
Indicators	Score	Comments (how it is and what is needed)
4) Degree of environmental awareness of interest groups: this indicator measures the level of knowledge of stakeholders on global environmental issues and the solutions that are being implemented and the possibility of participating in the implementation of these solutions.	0 Stakeholders are not aware about global environmental problems and their possible solutions.	
	1. Stakeholders are aware of the environmental problems around the world, but not of possible solutions	
	2. Stakeholders are aware of environmental problems worldwide and their possible solutions but do not know how to participate.	To establish suitable channels of participation (protocols or mechanisms)
	3. interested parties are aware of the global environmental problems and are actively participating in the implementation of related solutions	
(5)The access and sharing of environmental information by interested parties: this indicator measures the information needs, if identified, the adequacy of information management infrastructure	0 Environmental information needs are not identified and the information management infrastructure is inadequate	
	1. The environmental information needs are identified	1. Need for an adequate information system internally

in place and the exchange of this information.	but information management infrastructure is inadequate	and externally. 2. Linked to other parts of the project
	2. the environmental information is partially available and shared among interested parties, but do not cover all areas of activity and / or infrastructure management to manage and provide access to information to the public is limited	
	3 comprehensive environmental information is available and shared through a proper information management infrastructure	
6) Scope of inclusion / use of traditional knowledge in environmental decision-making: This indicator measures if traditional knowledge is being explored, if the sources of traditional knowledge are identified, captured and shared among the stakeholders for effective participatory decision-making processes.	0 The traditional knowledge is ignored and not taken into account in the corresponding participatory decision-making processes	
	1. the traditional knowledge is identified and recognized as important, but it is not collected and used in the relevant participative decision-making processes	
	2. The traditional knowledge is collected but not systematically used in relevant processes of participatory decision-making	A guide to capitalize traditional knowledge is being worked upon.
	3. the traditional knowledge is collected, used and shared for the effective participatory decision-making processes	
7) Existence of environmental education programs: This indicator measures both formal and informal environmental education programs instead of addressing global environmental issues.	0 There are no environmental education programmes in place	
	1 environmental education programs are partially developed and partially delivered	Environmental education must be crosscutting to all
	2 environmental education programs are fully developed but partially delivered	
	3. There are comprehensive environmental education programs and they are being delivered	
8) Scope of the linkage between research / science of the environment and policy development: This indicator measures the relationship between environmental policy and research; including the identification of the needs of research and research strategies and programs; as well as the importance of research for policy- development.	0 There is no linkage between the development of environmental policies and strategies and science / research programs	
	1 It needs research for the development of identified environmental policies , but they are not translated into strategies and relevant research programmes	To develop the environmental policy for the activities of the Ministry geared to strategies and programmes.
	2 strategies and relevant programmes for environmental research policy exists, but the information from the investigation does not fully	

	respond to the needs of policy research	
	3 relevant research outcomes are available for the development of environmental policy	

Capacity Outcome 3: Capabilities for the strategy, policy and development law		
The individuals and the organizations have the capacity to plan and to develop the effective environmental policy and related legislation, strategies and plans - they are based on the processes of decision making informed for world-wide the environmental management.		
Indicators	Score	Comments (how it is and what is needed)
(9) Scope of the planning and development of the environmental strategy: this indicator measures the quality of the process of planning and strategy development; If the planning and strategy development process produces plans and strategies related to the management of the environment; and if the resources and coordination mechanisms are in place for the implementation of such plans, programmes and projects.	0 The planning and environmental strategy development process is not coordinated and it does not produce plans and environmental strategies	
	1. The planning and environmental strategy development process does produce adequate plans and environmental strategies but they are not on-going/ they are not used.	
	2 plans and environmental strategies are produced, but just partially implemented due to funding constraints and / or other problems	1. There are budget constraints 2. To explore other financing or co-financing mechanism and mechanism of co-management with other institutions and how to do it.
	3. The process of planning and environmental strategy of development is well coordinated by leading environmental organizations and produces the necessary plans and environmental strategies being	

	applied	
(10) The existence of an appropriate environmental policy and regulatory frameworks: this indicator measures the integrity of regulatory and policy frameworks, the existence and the adoption of policies and relevant laws and if the mechanisms to enact, comply and enforce them / Policies and laws are established.	0 The environmental and regulatory policy are insufficient; they do not provide an favourable environment	
	1 There are some policies and relevant environmental laws but few are implemented and enforced	1. There are some policy guidelines and an environmental policy is needed. 2. Laws exist, but as an example, the environmental service one needs to be improved so that it can be applied.
	2 There are right frameworks of environmental policy and legislation, but there are problems in the implementation and enforcement of them	
	3 frames of appropriate policy and legislation are implemented and provide an adequate enabling environment; a compliance and enforcement mechanism is established and functions	
(11) Adequacy of the environmental information available for decision making: this indicator measures the adequacy of information available for decision making; If information is made available to decision makers and if this information is updated and used by decision-makers.	0 The availability of environmental information for decision-making is poor	
	1 There is some environmental information, but it is not enough to support environmental decision-making processes	It should be based on the environmental information system
	2 environmental information is relevant for the environmental decision makers, but the process of updating this information is not working properly	
	3. the political and administrative decision-makers obtain and use / update environmental information for environmental decision-making	

Outcome 4 Capacity: Capacities for management and execution		
Individuals and organizations have the skills and knowledge plan-do-check-act to enact environmental policies and regulatory decisions, and to plan and implement management actions / relevant and sustainable solutions for the global environment.		
Indicators	Score	Comments (how it is and what is needed)
(12) Existence and mobilization of resources by the relevant organizations:	0 Environmental organizations do not have sufficient resources for their programmes	

this indicator measures the availability of resources within the relevant organisations, if potential sources for funding resources are identified and if adequate resources are mobilized.	and projects and the requirements have not been evaluated	
	1. the resources needed are known, but are not being addressed	
	2. The sources of funding for these resource requirements are partially identified and resource requirements are partially addressed	To see mechanisms to have the necessary resources
	3 Adequate resources are mobilized and available for the operation of the initiative environmental organizations	
(13) Availability of necessary technical skills and technology transfer: this indicator measures the availability of skills and expertise, technical needs and sources are identified and accessed through the program or project and if there is a basis for an update on national basis in course of skills and knowledge.	0 The necessary skills and technology required are not available and the needs are not identified	
	1. The needs of skills and technologies required are identified, as well as their sources	
	2. Knowledge and technologies needed are acquired, but their access depend on foreign sources	<ol style="list-style-type: none"> 1. Facilitate the Ministry training program and existing resources 2. Contemplate the social-environmental component to the program 3. Appropriate technologies needed 4. Training agreements with other universities
	3.The skills and technologies needed are available and there is a national base, mechanism for knowledge updating and modernization of technologies	

Capacity Outcome 5: The capabilities of monitoring and evaluation		
Individuals and organizations have the capacity to effectively monitor and evaluate the projects and / or programs accomplishments against the expected outcomes and provide feedback for learning, adaptive management and to suggest adjustments to the course of action if necessary to preserve the global environment		
Indicators	Score	Comments (how it is and what is needed)
(14) Adequacy of the monitoring process of the project / program: it measures the existence of a monitoring framework, if monitoring involves interested parties and if the monitoring outcomes report the implementation process.	0 Irregular monitoring of the project being implemented, without a proper monitoring framework detailing what and how to monitor the project or program	
	1. Resources are assigned to monitoring or follow-up, but in itself, project monitoring is carried out periodically	At the ministerial level there is an area that performs this task, but the DGSA needs to develop it.
	2 regular participatory monitoring of outcomes takes place,	

	but this information is only used in part by the implementation of the project / program team	
	3. The monitoring information occurs on time and accurately and is used by the implementation team of learning and, possibly, to change the course of action	
(15) Adequacy of project process of evaluation / programme: this indicator measures the existence of an evaluation framework, if adequate resources and access to the information are available and if the evaluation outcomes report planning process.	0 None or ineffective assessments are conducted without an appropriate plan of evaluation; including the necessary resources	
	1. An appropriate evaluation plan is in place, but the evaluation activities are conducted irregularly	
	2. The evaluations are carried out in agreement with a plan of adequate evaluation, but the outcomes of the assessment are used only in part for the project / program implementation team and other staff members to design the next generation of projects	At the ministerial level there is an area that performs this task, but the DGSA needs to develop it.
	3 effective assessments are carried out on time and accurately and are used by the implementation team to correct the course of action if it is necessary and learn lessons for future project planning activities.	

Annex I. Asuncion Green Infrastructure. Biodiversity Conservation and Protected Areas to be strengthened

1. BIODIVERSITY IN ASUNCIÓN

Paraguay is located at the confluence of 3 major bio-geographical areas the Chaco; the Paraná and the closed, giving rise to a rich mix of vegetation throughout the country. Its capital, is located on the left bank of the Paraguay River and falls at the confluence of two ecoregions, the Chaco and the Atlantic Forest of Alto Paraná and has strong influence from two nearby ecoregions - the Southern Grasslands and Cerrado.

The metropolitan area of Asunción (greater Asuncion) covers 809 km² and contains 11 municipalities. The central municipality the City of Asunción is the oldest and has an exceptional expansion of green areas totaling 1,956 and covering 3.565 hectares or 28% of the municipality's territory. These range from small squares, parks and marshes to at least 10 larger areas under different types of formal protection including protected areas as part of the National System of Protected Area (SINASIP) (see table on previous page) The larger house significant representations of 3 different forest areas forest/scrub ecoregions. This includes large forested areas in the city's hills that have species representing the Atlantic Forest from the east and Chaco and closed from west and north respectively. In the west of the city on flatter land, include those typical habitats of the Paraguay River shoreline important for migratory birds (see below) and species from the southern grasslands. In addition to formal green areas, a further 23% of the municipal territory is made up of green areas in residential gardens and courtyards and 10% in water bodies (rivers, streams and lakes). The result is a capital city that has a rich and diverse biodiversity that houses an extraordinary assemblage of species from 4 different ecoregions. This matches the diversity of some protected areas of the SINASIP from more remote and wilderness areas and is outnumbered only in two much larger protected areas that have years of long-standing well established management - the Mbaracayu Forest Reserve, 64,000 has and the area of San Rafael, Managed Resources Reserve 73,000 has.

The most detailed data on biodiversity is available for bird species. The City is home to around 355 bird species which is almost half the 715 registered for the entire country (of the Castle & Clay, 2005). The Bahía de Asunción (Asunción Bay) and the Botanical Gardens have the highest number of registered bird species with 292 and 160 respectively. This extraordinary level of avian diversity in assumption is partly due to its strategic position on the Paraguay River migration route. The Bahia is an important stop-over site for species that make short migrations across the southern cone and also for the longer north - south migration routes crossing the continent. A total of 110 migratory species have been registered in the Bay of Asuncion (29% of the bird species in the city). One of SINASIP Protected Areas the Bahia is also part of the Western Hemisphere Shorebird Reserve Network. The Bahia is also considered one of the top 20 Pampa Ecosystems and is an Important Bird Conservation Area - was recognized globally for the conservation of several species of endangered birds, in particular the Buff-breasted Sandpiper (*Tryngites subruficollis*). At least 3% of the global population of this species use Bay habitat for roosting and feeding during migration. Other registered migratory species include the globally endangered gray crown cappuccino (*Sporophila cinnamomea*) the near threatened Dinelli's doradido (*Pseudocolopteryx dinelliana*). Among the 32 Nearctic migratory species registered in the Bay are shorebirds from the Charadriidae and Scolopacidae families such as the golden plover (*Pluvialis dominica*), the guy pititoi lesser yellow legs (*Tringa flavipes*), the white-rumped sandpiper (*Calidris fuscicollis*), the pectoral sandpiper (*Calidris melanotos*), and the common phalarope (*Phalaropus tricolor*). To less frequent migratory species is the Bobolink (*Dolichonixoryzivorus*). Though this species is not protected globally, the population trend of the species is negative and recently has been listed in Appendix II of the Convention on the Conservation of Migratory Species of Wild Animals (CMS) (Cartes et al., 2008). as well as migratory species the city houses a wide range of native bird species found more commonly in urban settings and others that are more recently adapted to urban habitats. For example the small black falcon or roadside mbyju'i falcon (*Falco ruficularis*) that have been seen in recent years nesting in one of the buildings of the City. It is only the third time that this species normally associated with large forests, have been recorded using artificial structures for nesting throughout its geographic range, which runs from Mexico to Argentina.

In addition to birds Asuncion has a high diversity of species from other taxa. Although registries are incomplete 23 species of amphibians have been recorded to date representing 27% of those registered in the country (Weiler et al, 2013) and 75 species of reptiles, 40% of all species recorded for Paraguay (Cacciali, 2011;) Cabral & Weiler, 2014). Among the reptiles, are the Boa constrictor or Mboi ro' and and broad-snouted caiman *Caiman latirostris* (Appendix I of CITES) *Cayman Cayman* or alligator hu, the *Eunectes notaeus* Paraguayan anaconda or cariyú and *Salvator merianae* or Black and white Tegu (Appendix II). In addition there are 15 mammal species excluding the recorded 27 bat species, but including some species uncommon in urban environments for example the ka'i paraguayi or Capuchin monkeys (*Cebus apella*), the jaguarundi, mbaracaja eira cat (*Puma yagouaroundi*); the crab eating racoon (*Procyon cancrivorus*) and neotropical otter (*Lontra longicaudis*).

Some 20,000 species of invertebrates have been recorded including the giant spider genus *Nephila* golden fabric; the spider, *Parawixia bistrinata*, and freshwater shrimp and sponges. Fifty three (53) fish species have recorded, mostly in the Bay. Asuncion's flora includes pristine areas such as some banks and sandy beaches on the Paraguay river with important endemic flora *Salix humboldtiana* var. Marti (Creole sauce), *Crataeva* wall (alligator whistle) and *Tessaria integrifolia* (bobo post).

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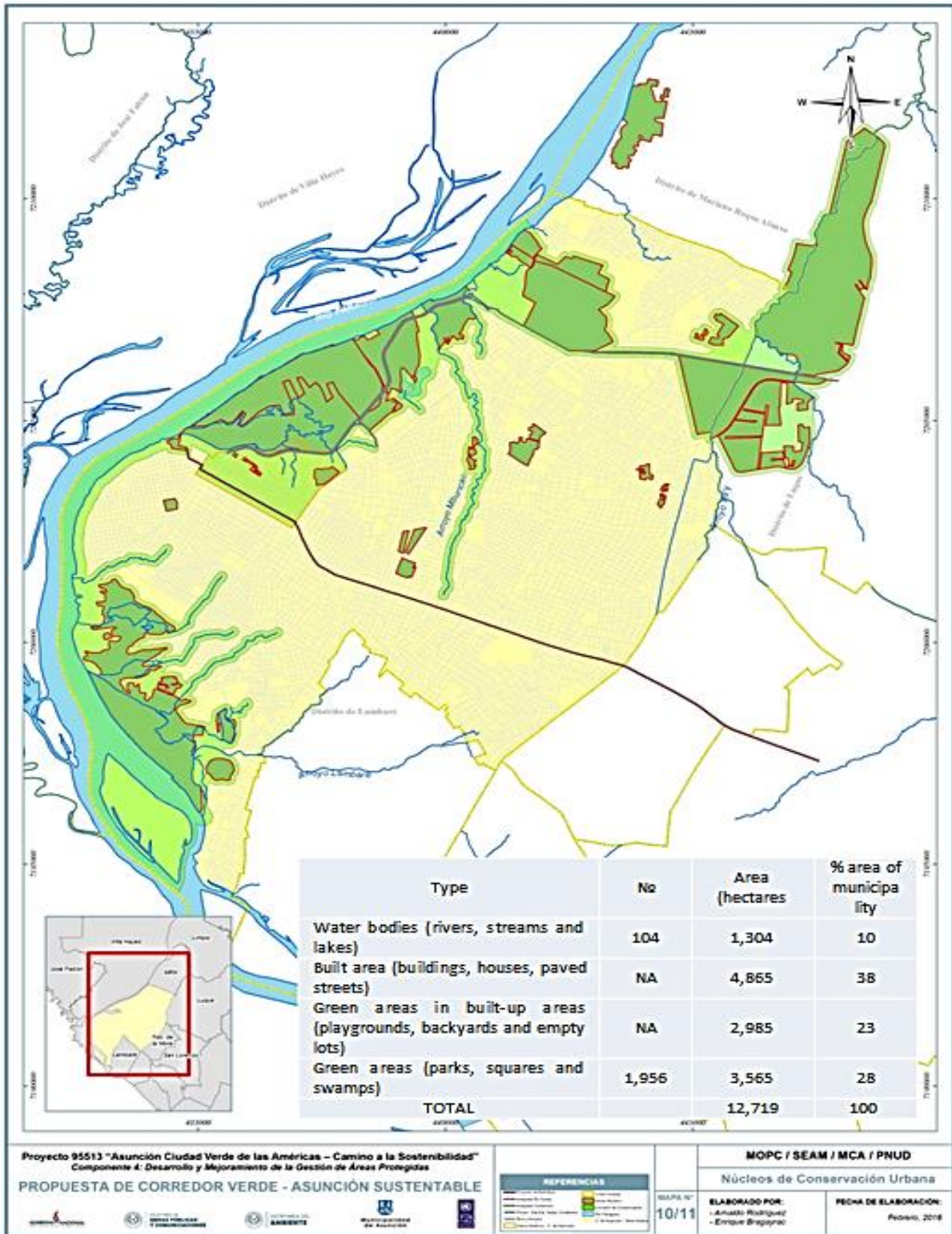
2. PUBLIC PROTECTED AREAS AND GREEN AREAS OF THE ASUNCION GREEN CORRIDOR

The Green Corridor comprises 40 core public protected areas and other green areas (parks, plazas) with surface areas greater than 0.5 hectares plus a buffer zone of 200 mts (2 blocks) around each core area. In certain areas (e.g. wetlands, Paraguay River and islands) the buffer zone has a greater area to ensure connectivity. Asuncion's historical center (300 hectares) has also been included within the buffer zone.

ID	District	Name	Block	Surface (Ha.)
1	Asuncion	Asuncion's Bay	I	303
2	Asuncion	San Miguel Bank	I	300
2	Asuncion	San Miguel Bank	I	31
3	Asuncion	S/N	I	133
4	Asuncion	S/N	I	73
5	Asuncion	Asuncion Zoo and Botanical Garden	I	255
6	Asuncion	Cavalry Regiment (RC4)	I	47
7	Asuncion	Viñas Cue/ River Park	I	11
8	Asuncion	Military site	I	21
9	Asuncion	Caballero Park	I	13
10	Asuncion	"De los Desaparecidos" Park	I	0.4
11	Asuncion	"Comuneros" Square	I	0.4
12	Asuncion	"La Victoria" Park	I	0.6
13	Asuncion	Congress Square	I	0.3
14	Asuncion	"Plaza de Armas" Square	I	0.8
15	Asuncion	Juan de Salazar Square	I	0.3
16	Asuncion	S/N	I	0.4
17	Asuncion	S/N	I	0.4
18	Asuncion	Solidarity Park	I	6
19	Asuncion	Carlos Antonio López Park		6
20	Asuncion	Embassy of the U.S.A.		5
21	Asuncion	Mburuvichá Roga		9
22	Asuncion	Seminary Park		12
23	Asuncion	Natural Monument "Cerro Lambaré"	II	22
24	Asuncion	S/N	II	18
25	Asuncion	S/N	II	472
26	Asuncion	S/N	II	12
27	Asuncion	MOH site	III	3
28	Asuncion	Mburicao Park	III	2
29	Asuncion	MOH property	III	2
30	Asuncion	Health Park	IV	23
31	Asuncion	IPS site	IV	7
32	Asuncion	S/N	V	7
33	Asuncion	Ykua Sati Villa	V	2

ID	District	Name	Block	Surface (Ha.)
34	Asuncion	S/N	V	3
35	Asuncion	Metropolitan Guasu Park	VI	131
36	Luque	"Ñu Guasu" Park	VI	79
37	Luque	Military Site	VI	198
38	Asuncion	Military Site	VI	19
38	Asuncion	I Army Corps (former cavalry)	VI	3
39	Luque	Airport Site	VI	593
39	MR Alonso	Airport Site	VI	31
39	MR Alonso	Airport Site	VI	40
40	MR Alonso	S/N	VII	114
		TOTAL (ha)		3,009

Map 1 – Asuncion Green Corridor – Surface area of Green Areas in Asuncion



3. Description of Protected Areas Selected for Strengthening

ECOLOGICAL RESERVE SAN MIGUEL BANK AND ASUNCION BAY (RBSMBA)

- The largest protected area is formed by the San Miguel Bank and Asuncion's Bay (25 ° 15'49 "S, 57 ° 37' 47" W), created by law N ° 2.714 /2005, with an area of 300.7 hectares, within the municipality of Asuncion, Central Department. It protects a wetland that is located on the northern outskirts of Asuncion. The site is separated from the River Paraguay by the San Miguel Bank, a narrow lowland peninsula, with a length of about 4 km and 2 km width. Although the wetland is a relatively small area, it is home to a great diversity of birds (256 birds have been documented, of which 82 are waterfowl⁴¹), highlighting migratory species of global importance.
- It is located in the area of influence of the Humid Chaco (birds with different population patterns, with abundance of water species, mainly ducks, herons, storks) and the Atlantic Forest. Due to its location, it is an important habitat for migratory and threatened birds, with over 9,000 birds migrating between the South and North, and descending in the bay's wetlands.
- The Asuncion Bay is considered an Important Bird Area (IBA) of relevance for aquatic species. In the 2008 inventory carried out by Guyra Paraguay/Birdlife International, it qualified under criterion A4i (>1% of global population for one species) and under criterion A4iii (>20,000 water birds). At the ecological Reserve Bank San Miguel and Asunción Bay, there are seven registered threatened species at a national level. One of them, the Cappucino Grey Crown (*Sporophila Cinnamomea*), is considered to be "vulnerable" (with a high probability of extinction in the medium term.) It is thought to be species of migratory seedbed which feeds exclusively on seeds of native grasses; it is regarded vulnerable to extinction (VU) globally according to IUCN (2013). Besides, seven species classified as near threatened (NT) have been registered. Amongst them there is a long-distance migratory bird: the Cinnamon Sandpiper (*Tryngites Sandpiper*) which makes a stop every year at the Bay, the Flamenco (*Phoenicopterus chilensis*) is accidental in the Bay and wanders the East region of Paraguay; five species of grassland birds wetlands and shrubs which are short distance migrants and move from North to South in the region and which visit the Bay regularly.
- Two of these species are only known from historical records, Flamenco (*Phoenicopterus Chilensis*) and the Condor (*Vultur Gryphus*).
- The critical areas of the Bay of Asuncion are given by the habitat of migratory species which were modified to remove sand for the levelling of the waterfront. The Environmental Impact Assessment did not consider the existence of the conservation unit.
- With regard to the flora of the Asuncion Bay, about 97 species of plants have been registered. These correspond to 35 botanical families; most of them of aquatic-marshy nature in this area of influence (Escobar & Mereles, 1994).
- The vegetation that corresponds to the shoreline not impacted by anthropogenic actions is richer in biodiversity, where the waters become of lentic environments, and fish species develop, some of them floating, submerged and semi-submerged. The vegetation linked to water, corresponds to the following: aquatic vegetation (floating or submerged) and marsh vegetation (riparian, found in the sandbanks and ravines.) There has also been found species from the Astaraceae family such as; (*Copernicia alba*) "Kaaranda'y"; from the Astaraceae (*Tessaria integrofolia*) Palo Bobo. Also other species such as: (*Crataeva tapia*) Orange Tiger, (*Commelina diffusa*) Santa

⁴¹ Lesterhuis, Arne j. 2006

Lucia jhovy, (*Cyperus giganteus*) "Piri"⁴². Many of these species have already been affected by loss of habitat by urban territorial modification.

- This conservation unit is together with the Botanical Garden of Asuncion, one of the core birds site. Also due to its geographical location, it makes up a natural biological corridor associated with the Paraguay River (Pic. (2/ip 1 to 17))
- Threats: Indiscriminate fishing and change in the dynamics of the river to provide fish, resources as a result of river navigation of large barges, many of them transporting fuel to Bolivia coming from Venezuela and minerals from Brazil.
- Administrative authority: Law N ° 2.714/05

Municipality of Asunción - Secretary of the Environment

ASUNCION BOTANICAL GARDEN AND ZOO CONSERVATION

- Asunción's Botanical Garden and Zoo is one of the main lungs of the city. It has more than 110 hectares of natural forest and open areas complemented by a sector dedicated to Zoo. The Municipality of Asuncion is in charge of this unit's administration.
- It forms an ecological corridor / urban protected landscape, with 4 conservation cores consisting of the Botanical Garden, Cavalry Regiment (RC4), Viñas Cué Military Prison, the River Park, the Viñas Cué Biocentre and the Paraguay River, of 334.5 ha. It is influenced by the Humid Chaco and the Atlantic Forest, representing one of the most important forest remnants of high forests in Asuncion, hosting species such as *Tabebuia spp*, *Cedrela odorata*, *Peltophorum dubium*, *Albizia niopoides* (threatened), and species of cacti.
- It is divided into four areas, which are: a) the Zoo, with over 70 species of animals, mammals, birds, reptiles and others. As the icon of the zoo, there is the Taguá a species of woods peccary, which inhabits the Paraguayan Chaco. It was believed to be extinct and was registered in the 80's; b) the Botanical Garden, with native species of trees over 150 years old; the Museum of Natural History, the former country house of Don Carlos Antonio Lopez, Paraguay's first president; and a plant nursery, with over 500 species, many of them medicinal. They help in the education process to visitors about the properties of herbs.
- The Botanical Garden hosts species of open areas and forest, mostly residents throughout the year. According to the Asuncion Inventory and bird census carried out by the Guyra Paraguay Association (2016), this conservation unit is the second in hosting the largest number of birds in Asunción Capital, with a total of 161 bird species identified.⁴³
- Threats: Pressure - carrying capacity of visitors and solid waste management, in a greater proportion of the Zoo and Service Centres. Very pronounced edge effect, as well as poorly managed exotic species. Weak environmental adaptation (solid Reminders and others)
- Conservation object: Toucan (*Pteroglossus castanotis*) and Monkey/Kai (*Sapajus apella*)
- Administrative authority: Municipality of Asuncion

⁴² Abt Associates Inc, Environmental Impact Report-RHYME. December 2004.

⁴³ List of the birds of Asuncion, Hugo del Castillo 2014 / In Paraquaria Vol 2 N ° 1:24-42).

METROPOLITAN GUASU PARK

- It is one of the urban conservation units. The Ñu Guasu Park, the area of the Silvio Petrossi airport, the Ñu Guasu Reserve of Managed Resources⁴⁴ and 1st Army Corps / former Cavalry together form an important conservation core with natural grasslands and a diversity of wildlife, in a green corridor of 1.069 hectares. The administration of this site is run by the Ministry of Public Works and Communication (MOPC) and the Ministry of National Defense, and the DINAC.
- According to Ferreira (2016) the Park sits on a vast grassland of native prairie commonly called "big field" (in Guarani: ñu guasu), crossed by the Itay stream, it is thought that the original natural vegetation was formed by forest formations in discontinuous islets. These were composed of gregarious forest species of Carob Tree, *Prosopis spp.*, *Tabebuia spp.* and other intrusions from the Chaco. It is influenced by the Southern Grasslands, Atlantic Forest and Cerrado ecoregions and contains lagoons and wetlands as well as plant communities in strips along the Itay stream. Most of its plant communities area grasslands.
- According to information, there are records published by local newspapers (Ultima Hora, 29/09/2012) where the Moor cat or Yaguarundi (*Puma Yaguarundi*), Aguara'i or Pampas Fox (*Pseudalopex gymnocercus*), Apere'a or Guinea Pig (*Cavia porcellus*), Teju Guasu (*Tupinambis merianae*) and Cariyú or Yellow Boa (*Eunectes notaeus*) are cited. This information is ascertained by Ferreira (2016) as well as by the SEAM (2010), where the habitat recovery is also recommended, especially in the Itay stream as well as areas of high value for wildlife connectivity.
- With reference to studies performed on the land itself, a diagnosis carried out by technicians of the Environment Secretariat in 2007 (at the request of the Municipal Environmental Directorate - MOPC-) , describes it as a low area dominated by a system of wetlands and consisting of a wide variety of natural communities whose stability depends exclusively from the water in the area (ABC, 2008) According to the birds Census and inventories carried out by Guyra Paraguay, there is a total of 105 species of birds.
- Threats: Grassland fires as cultural practice by hunters of the Brazilian pig and other wild animals for consumption. Increased vehicular traffic, as well as infrastructure projects that may affect the water supply system and the wetland forming. There is also information that these habitats allow the reproduction of migratory species.
- Conservation objects: Solitary Sandpiper (*Pitotoi Solitario*), Crowned Slaty Flycatcher (*Aurantio atrocristatus*) Ype Kutiry/Alita Azul – Patillo/Brazilian Duck (*Amazonetta brasiliensis*), yaguarundi (*Puma yagouarundi*) and Brazilian Pig (*CaviaBrazilian pig*)

⁴⁴ The Managed Resource Reserve Ñu Guasú was established by Decree No. 2,795 in 2006 - 280 ha of surface (2.664,73 m2), registered in the Directorate General of Public Records, Second Section, individualized as Finca No. 38.568, under Nr. 1, sheet 1 and following of year 1997, with Current Account Ctral N ° 27-5440-01, owned by the Paraguayan State - Ministry of National Defence.

Annex J – Training Plan

Subjects	Beneficiaries	Training formats	Frequency	Partnerships
Sustainable city development under a national/municipal management approach with civil society participation. Priority areas: transport, solid waste management and chemicals, biodiversity and green areas; climate change mitigation and adaptation	Political and technical levels: SEAM, MOPC, Municipalities, STP, SEN, MH, CSOs	Conferences with participation of international experts and exchange of experiences with other cities	1/year (PY1, PY2, PY3)	IADB/ESCI Sustainable Cities Network
		Specialization program with modules supported by national and international experts	3 year duration (2-3 modules/year)	
Urban planning and sustainable city development	Technical level SEAM, MOPC, Municipalities, STP, SEN, MH, CSOs	Workshops with national and international experts	2 workshops/year	Universities (national and foreign)
Strengthening of business management in urban sustainability (e.g. energy efficiency in transport, solid waste management, clean technologies, others)	Private sector	Conferences and workshops	2 events/year	Paraguayan Industrial Association Global Compact
Urban protected areas and tourism	SENATUR, tourism operators	Conferences and workshops	2 events/year	SENATUR
MRV system for sustainable city indicators	Technical level SEAM, MOPC, Municipalities, STP, SEN, MH, CSOs	Workshops	2 workshops PY1 2 workshops PY2	
Inspection for improvement of waste streams	SEAM and municipalities' inspectors and authorities	Workshops	2 workshops/year	
Mainstreaming gender in territorial planning	STP, Municipal Development Council, Municipal Planning Directorate, IAPA, SEAM	National workshop; exchange of experiences; international meetings with participation of other countries; webinar	1 national workshop/year 2 international workshops	Sustainable Cities Network GEF Global Platform
Mainstreaming gender and capacity development	Municipality, CSOs	Course, national workshop for diagnosis and capacity development plan	2 workshops PY1 1 workshop/year rest of project	Ministry of Women
Gender and sustainable development (links with SDGs)	SEAM, STP, AMA, CSOs	Open event on concepts, experiences and dialogue, bilateral meetings	1 event & 2 meetings PY1 1 bilateral meeting/year rest of project	PEI, UNDP
Gender equality in businesses	Private sector	Semi-presencial course	1 course/year	UNDP, Ministry of Labor
Certification of public transport drivers (energy efficiency in driving, gender sensitive issues, driving strategies)	Bus drivers (100 drivers)	Workshops	4 workshops (after the mobility survey and bus monitoring pilot)	Metrobus project Ministry of Labor
Analysis of transport data	MOPC/VMT, SEAM, AMA municipalities, STP, MIC	Workshops	1 workshop (after the mobility survey and bus monitoring pilot)	

Annex K. Description of Solid Waste Management Pilots

1. Clean-up and care in the " San Miguel Bank and Asuncion's Bay Ecological Reserve" Pilot Project Concept

Objective:

To test, demonstrate, and evaluate the results of a pilot program to restore and preserve a fraction of 5% of the San Miguel Reserve Bank area and Asuncion Bay removing deposited waste, establishing a monitoring system so that waste depositing does not continue and vegetation is restored.

Methodology

- Intergovernmental agreements between the municipality of Asunción and SEAM: required for the implementation of the Rescue Plan and the establishment of the pilot. The implementing site will be defined and agreed upon.
- Consultation with recyclers. To present the concept and benefits of the pilot to recyclers, together with authorities of municipality and of SEAM.
- Development of the annual work plan. This will be based on the Rescue Plan developed for the entire reservation and it will contain the activities plan, the project organization and works operation.
- Acquisition of equipment, tools, signs and fences. The materials necessary for the operation will be acquired.
- Communication campaign to prevent the deposit of MSW in the site. To develop communication materials required for the ongoing campaign and implement it. Mainly focused on the community and nearby schools.
- Training of recyclers. The staff who will participate, generally knows how to perform their activities, they will be given basic training on health and safety and in the scheme of cleaning, surveillance and prevention.
- Implementation of activities. As an initial proposal, the area will be fenced, the cleaning will be carried out and the garbage collection will be done at a rate of half a hectare per month, with an initial team of 10 people.
- Replication A "Practical Improvement for Cleaning" guide will be developed for workers.

2. Collection- Separation Pilot Project Concept

Objective.

To prove, demonstrate, and evaluate the results of a pilot program of separation of produced municipal solid waste in a socio-economically representative community (neighbourhood or colony), on a reasonable scale of 10,000 people (10 Ton/day approximately), in the metropolitan area of Asuncion.

Methodology

- **Site Location:** The following criteria/alternatives will be taken into account:
 - On the grounds Cateura itself (it would have lower impacts and risks, it would require agreement with company operator and recyclers that operate it);
 - In one of the two sites determined by the PMGIRSU for the transfer and separation stations that will be established, according to selected option 4;
 - A nearby site or in the neighbourhood where MSW is generated, which should not be an area of high socioeconomic level, to avoid resistance;
 - In proximity of the Green corridor, where advantage could be taken from the compost produced with the organic fraction to strengthen the soil and if possible near to a bicycle path to synergize with the collection;
 - Site within area of industrial land use;
- **Intergovernmental agreements between municipalities and the SEAM:** required for identifying and obtaining the permit for the site where the activities of collection and separation will take place. The pilot will be conducted by UNDP project, with the support of the municipality (ies), SEAM and of one existing and established Civil Society Organization (CSO).
- **Socio-political consultation with collectors/in-site recyclers and with the community where it will take place.** This is a factor indispensable for the success. To present concept and benefits of the Pilot, for collectors/in-site recyclers and the community, accompanied by authorities of the municipality and the SEAM. The legal operation will be by the CSO.
- **Development of the annual work plan.** Plan of activities, including the project organization and works operation. It will be based on the previously developed conceptual Business Plan.
- **Physical establishment of facilities.** Building an infrastructure or adapting the site, installation of equipment to move garbage materials, operation testing.
- **Collection communication campaign.** To develop communication materials required for the on-going campaign and implement it. It will be focused mainly to households, neighbourhoods associations, schools, production centres and shopping centres; if it is possible on television.

- Training of collectors/in-site recyclers. The staff who will participate, generally knows how to perform their activities, they will be given basic training on health and safety and in the operation scheme.
- Implementation of collection and separation. As an initial proposal, after the communication campaign has been started, there will be a selective collection in houses, (3 days per week) schools, businesses, and organizations (3 day a week), in turn. Transfer to operations site, separation and packaging. An initial team of 10 people.
- Replication A Guide for Separation Best practices will be developed on two levels: for homes and for workers; more like a Train the Trainers course.

3. Recycling Pilot Project Concept

Objective.

To test, demonstrate, and evaluate the results of a pilot program for material recycling with economic value from the separation of solid waste produced in the pilot of collection and separation in a neighbourhood. The estimated scale is of 3 Ton/day, in the metropolitan area of Asunción, based on one of the conceptual business plans developed.

Methodology

- Site Location: The following criteria/alternatives will be taken into account:
 - A site near or in the neighbourhood where the pilot of collection and separation is established, which should not be an area of high socioeconomic level, to avoid resistance;
 - One of the two sites determined by the PMGIRSU for the transfer and separation stations that will be established, according to selected option 4;
 - Site within area of industrial land use;
 - Near a bike path to take advantage of "clean" waste with recycling potential tank: batteries, bottles, paper, small electronic etc.
- Legal arrangements and obtaining permission from the municipality and from SEAM: required for the operation of the pilot. The pilot will be conducted by UNDP project, with the support of the municipality (ies), SEAM and of one existing and established Civil Society Organization (CSO).
- Design and physical establishment of facilities. The process will depend on the material or materials that will be recycled. It seeks to develop a process that adds value to the product, based on developed business plans. Building an infrastructure or adapting the site, installation of equipment for processing materials, operation testing.

- Socio-political consultation with collectors /in-site recyclers. To present concept and benefits of the Pilot, for collectors/in-site recyclers and the community, accompanied by authorities of municipality and SEAM. The legal operation will be via the OSC, for hires.
- Development of the annual work plan. Plan of activities, including the Organization of the project and works operation. It will be based on the previously developed conceptual Business Plan.
- Training of collectors/in-site recyclers. Participating staff, will be trained in the process of recycling as well as health and safety and in the scheme operation
- Implementation of the recycling project. It will begin by processing the products of selective waste collection and separation from the pilot. However, it will be possible to subsequently open it to other materials that have been collected from other generators. An initial team of 10 people is thought of.
- Replication: A "Recycling Best Practices" guide will be developed for workers.

Annex L. Maps

see attached file



Annex M. Letter of Agreement with Government of Paraguay and Description of Support Services to be provided by UNDP Country Office

LETTER OF AGREEMENT BETWEEN UNDP AND THE SECRETARIAT OF ENVIRONMENT OF PARAGUAY FOR THE PROVISION OF SERVICES TO SUPPORT THE IMPLEMENTATION OF THE PROJECT "ASUNCION GREEN CITY OF THE AMERICAS – PATHWAYS TO SUSTAINABILITY" AWARD 00096984 IN THE CONTEXT OF THE NATIONAL IMPLEMENTATION MODALITY

1. Within the framework of the "Asuncion Green City of the Americas – Pathways to Sustainability", the UNDP and the Ministry of Environment of Paraguay (hereinafter the counterparty) express their agreement for UNDP to provide support services to the aforementioned project implementation, in accordance with the project document signed by the parties.
2. The UNDP country office may provide support services for assistance with reporting requirements and direct payment. In providing such support services, the UNDP country office shall ensure that the capacity of the Government-designated institution is strengthened to enable it to carry out such activities directly. The costs incurred by the UNDP country office in providing such support services shall be recovered from the administrative budget of the office.
3. The UNDP country office may provide, at the request of the designated institution, the following support services for the activities of the programme/project:
 - (a) Identification and/or recruitment of project and programme personnel;
 - (b) Identification and facilitation of training activities;
 - (c) Procurement of goods and services;
4. The procurement of goods and services and the recruitment of project and programme personnel by the UNDP country office shall be in accordance with the UNDP regulations, rules, policies and procedures. Support services described in paragraph 3 above shall be detailed in an annex to the programme support document or project document, in the form provided in the Attachment hereto. If the requirements for support services by the country office change during the life of a programme or project, the annex to the programme support document or project document is revised with the mutual agreement of the UNDP resident representative and the designated institution.
5. The relevant provisions of the Special Standard Agreement between the Government of Paraguay and the United Nations Development Programme signed on October 10th, 1977 (the "SSA"), including the provisions on liability and privileges and immunities, shall apply to the provision of such support services. The responsibility of the UNDP country office for the provision of the support services described herein shall be limited to the provision of such support services detailed in the annex to the programme support document or project document.
6. Any claim or dispute arising under or in connection with the provision of support services by the UNDP country office in accordance with this letter shall be handled pursuant to the relevant provisions of the SSA and the project document.
7. The manner and method of cost-recovery by the UNDP country office in providing the support services described in paragraph 3 above shall be specified in the annex to the programme support document or project document.



8. The UNDP country office shall submit progress reports on the support services provided and shall report on the costs reimbursed in providing such services, as may be required.
9. Any modification of the present arrangements shall be effected by mutual written agreement of the parties hereto.
10. If you are in agreement with the provisions set forth above, please sign and return to this office three signed copies of this letter. Upon your signature, this letter shall constitute an agreement between your Government and UNDP on the terms and conditions for the provision of support services by the UNDP country office for nationally managed programmes and projects.

Yours sincerely,

Cecilia Ugaz
UNDP Paraguay

Rolando de Barros Barreto
Ministry of Environment

DESCRIPTION OF UNDP COUNTRY OFFICE SUPPORT SERVICES

1. Reference is made to consultations between the Secretary of Environment, the institution designated by the Government of Paraguay and representatives of UNDP with respect to the provision of support services by the UNDP country office for the nationally managed programme or project "Asuncion Green City of the Americas – Pathways to Sustainability" AWARD 00096984.

2. In accordance with the provisions of the letter of agreement signed on *Date of signature (LOA)* and the project document, the UNDP country office shall provide support services for the Project as described below.

3. Support services to be provided:

Support services*	Schedule for the provision of the support services	Cost to UNDP of providing such support services (where appropriate)	Amount and method of reimbursement of UNDP (where appropriate)
1. Payments, disbursements and other financial transactions.	During project implementation	Universal Price List	Support Services
2. Recruitment of staff, project personnel, and consultants.	During project implementation	Universal Price List	Support Services
3. Procurement of services and equipment, and disposal/sale of equipment.	During project implementation	Universal Price List	Support Services
4. Organization of training activities, conferences, and workshops, including fellowships.	During project implementation	Universal Price List	Support Services
5. Travel authorizations, visa requests, ticketing, and travel arrangements.	During project implementation	Universal Price List	Support Services
6. Shipment, custom clearance, vehicle registration, and accreditation.	During project implementation	Universal Price List	Support Services

* UNDP direct project support services will be defined yearly, and for those executed during the period, direct project costs will be charged at the end of each year based on the UNDP Universal Pricelist (UPL) or the actual corresponding service cost.

4. Description of duties and responsibilities of the parties involved:

The project will be conducted through the National Implementation Modality (NIM). The Secretariat of Environment (SEAM), will act as a partner in the National Implementation, and with the support of UNDP as GEF Implementing Agency. The DGPCB will be responsible for directing and managing the project and monitor the compliance of project work plans as a basis for its implementation.

The process will take place at three levels: (i) *The National Project Steering* (ii) *Project Operational Team*, (iii) *Advisory Group and Project Sector Advisory Groups*.

The SEAM will appoint a senior executive as National Project Director (NPD) for the implementation of the project, which may be the Minister of the SEAM. The DNP will receive technical support from the Project Operational Team as well as technical support from the UNDP provided by the UNDP/GEF Regional Technical Advisory responsible for project and the Environment and Energy Programme Officer of the UNDP Office in the country.

The *Project Operational Team* (EOP) will consist of members of the SEAM, and will be strengthened with experts from key areas, mainly: strategic planning, conservation and sustainable use of biodiversity, strategic management of information and communication. An administrative assistant can also be hired.

UNDP will provide technical and operational support necessary for the implementation of the activities and results of this project and shall ensure that all consultant contracts, purchase orders and service contracts for the project are in accordance with UNDP rules and procedures.

Project authorities will undertake contracts and procurement for all purchases of less than USD 10,000. These minor operations will comply with the rules and procedures contained in the for National Implementation projects Manual. The Manual can be viewed on the UNDP website: www.py.undp.org. According to the above, the ownership of equipment, spare parts and other goods financed with project funds will be of the UNDP. The transfer of property rights will be determined in accordance with the policies and procedures of UNDP. All goods will be considered property of UNDP until its transfer to the SEAM.

UNDP will assist in the administration of the funds provided by GEF. UNDP will be able to support the management of any additional funds for co-financing of this project. These measures shall be included in the corresponding project document or Memorandum of Understanding. The contributions will be subject to audit established in the UNDP financial regulations rules.

Annex N. GHG Emission Reduction Calculations

It is assumed, based on the inventory of emissions carried out by IDOM in 2014, that the GHG emissions in the mobility sector in the Asunción Metropolitan Area would be around 2.3 MtCO₂-e in 2016⁴⁵ (it was assumed a biannual growth of 3% on the transport sector emissions with regards to 2012). Assuming the implementation of a 5 year GEF project, the total cumulative emissions would be around 11.5 MtCO₂-e from 2016 to 2020.

The emission reductions were calculated within the transport sector through the Metrobus and the construction of 100Kms of bicycle lanes. Mitigated emissions at the first half of project implementation by the bicycle lanes would be around 45,000 tCO₂-e, while the Metrobus wouldn't be contributing any GHG emission reduction, as it will be starting operations only at the end of 2018. At the end of 2020, the Metrobus will be bringing GHG cumulative emission reductions of 64,000 tCO₂-e, and bicycles lanes would accumulate around 191.000 tCO₂e. The total cumulative mitigated emissions at the end of the project will be of 255,000 tCO₂e.

The estimated percentage variation with respect of the baseline would be of 0.7% in the medium term (total projected emissions are 5.75 MtCO₂e) and at the end of the project would be around 2.2% of the total emissions in 5 years from the mobility sector (0.255/11.5 MtCO₂e).

Bicycle lanes: For the calculation of GHG emissions it was used the methodology outlined in the manual “*Calculating Greenhouse Gas Benefits of GEF Transportation Projects*”⁴⁶. The Manual also counts with an excel template that facilitates the calculation. The calculation template produced the following results, that has been processed to be shown in an annual basis:

TEEMP Model Result	910	Tons of CO ₂ eq/year/Km	
Implementation year	Total Kms built	tCO ₂ eq reduction by year	Cumulative tCO ₂ eq reduction
1	0	0	0
2	10	9,100	9,100
3	40	36,400	45,500
4	60	54,600	100,100
5	100	91,000	191,100

⁴⁵ IDOM, Study CE 3 Urban Growth in Asuncion Metropolitan Area. Final Report B.ID Development, Editor. 2013, Ministry of Public Works and Communication.

⁴⁶ Institute for Transportation and Development Policy, Manual for Calculating Greenhouse Gas Benefits of Global Environmental Facility Transportation Projects, 2015, Global Environmental Facility: New York.

The entry values are exposed in the following table. Data was obtained using the model “Sketch Analysis”

Input Parameters	Value or Description Used
Bicycle lane length (Km)	30
Bicycle lane width (m)	2
Average bicycle trip (Km)	3.88
Type of bicycle lane	Painted
Bicycle lane quality	Good
Connection	Connected to City Centre.
Weather and Climate	<ul style="list-style-type: none"> - 30% of the time is uncomfortable to use the bicycle lanes due to weather - 70% of the bicycle lane has some kind of shade or is covered.
Parkings	There is safe infrastructure to park the bicycles.
Two Ways	One way streets have two way bicycle lanes.
Topography	Flat
Lighting	Bicycle lanes lighting is adequate
Traffic Management	Active measures in place to deal with traffic
Intersections	Adequate measures to ensure bicycle and pedestrian priority are in place.
Public Transport Integration	It is allowed to travel by bus carrying a bicycle.
General Measures	Existing laws to protect and favor bicycle lane use.

Metrobus: for this calculation, the short TEEMP template methodology was utilized to estimate the GHG emissions in 2019 and 2020 (the two last years of the GEF project). The estimation for the two-year period was of 32,000 tCO₂e/year. The following table reflects the input and output values in the BRT TEEMP model:

Project Name	Metrobus
Location	AMA
Details	18 Km of dedicated bus lanes

Base Year	2018	2027	2037
Cumulative length of BRTS Constructed (km)	18	18	18

BRT Ridership	Ridership figures are not available. I would like to estimate the figures using the ridership estimator
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Existing Public Transport Ridership in the Corridor/day ('000s)	2018	2027	2037
	250		

250

Annual population growth	2018-2022	2023-2027	2028-2032	2033-2037
	2.0%	2.0%	2.0%	2.0%



		2018	2027	2037
Mode shift to BRT				
private	Car	10%	10%	10%
	2-wheeler	1%	1%	1%
	Taxi	1%	1%	1%
public	3-wheeler			
	Bus	88%	88%	88%
	Mini-bus			
	TOTAL	100%	100%	100%

BRT Scorecard

[Click here for BRT Standard write-up and Scoring Instructions](#)

Component	Existing System	BRT System	Score per component
BRT Basics			
Busway Alignment	0	8	8
Dedicated right-of-way	0	8	8
Off-board fare collection	0	8	8
Intersection treatments	0	7	7
Platform-level boarding	0	7	7
Service Planning			

Multiple routes	3	2	4
Express, limited and local services	1	3	3
Control center	1	3	3
Located in top-ten corridors	2	2	2
Demand Profile	1	2	2
Hours of Operations	3	3	3
Multi-corridor network	1	1	2
Infrastructure			
Passing lanes at stations	0	4	4
Minimizing bus emissions	1	2	3